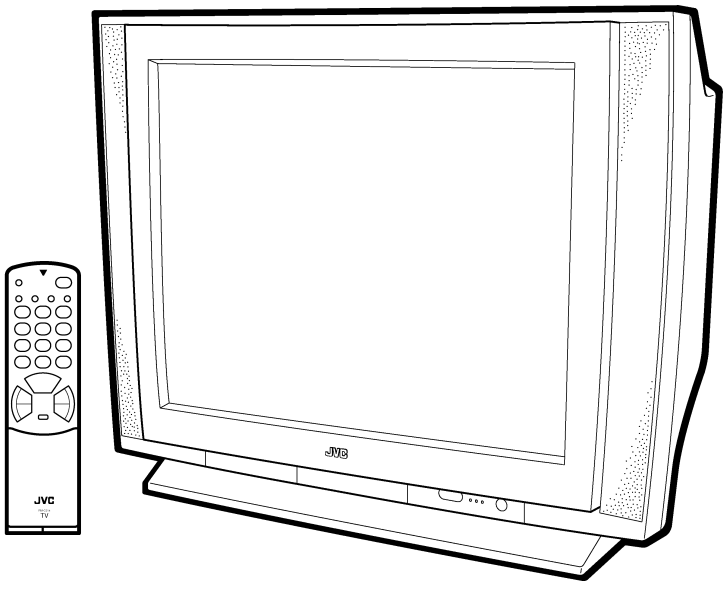
JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS
MF

HV-L29PRO
HV-L29PRO/HK
HV-L29PRO/-A
HV-L29PRO/AU
HV-L29PRO/EE



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MC-Service

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No.51828
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SPECIFICATIONS

Item		Content
Dimensions (W × H × D)		73.2cm × 58.8cm × 51.8cm
Mass		48.0kg
TV RF System		B/G, I, D/K, K1, M
Colour System		PAL / SECAM / NTSC 3.58 / NTSC 4.43
Stereo System		A2 (B/G) / NICAM (B/G, I, D/K, K1)
Teletext System		Fastext (UK system) ∗ [∗ Without TEXT mode : HV-L29PRO/HK] WST(world standard Texst)
Receiving Frequency	**VL**	46.25MHz ～ 168.25MHz
	VH	175.25MHz ～ 463.25MHz
	UHF **CATV**	471.25MHz ～ 863.25MHz Mid (X～Z+2, S1～S10), Super (S11～S20) & Hyper (S21～S41)
Intermediate Frequency	**VIF**	38.0MHz
	SIF	32.5MHz(5.5MHz) / 32.0MHz(6.0MHz) / 3.15MHz(6.5MHz) / 33.5MHz (4.5MHz)
Colour Sub Carrier Frequency	**PAL**	4.43MHz
	SECAM	4.40625MHz / 4.25MHz
	NTSC	3.58MHz / 4.43MHz
Power Input		AC 110V～240V , 50/60Hz
Power Consumption		Max 254W / Avg. 170W
Aerial Input Term		75Ω unbalanced, Coaxial
Picture Tube		29"(68cm) measured diagonally
High Voltage		31.5kV $^{+1.0kV}_{-1.5kV}$ (At zero beam current)
Audio Power Output		20W + 20W
Speaker		φ10cm Round type × 2 / φ3.5cm Round type × 2
Input Terminal	**Video**	1Vp-p 75Ω
	Audio(L/R)	500mVrms(-4dBs), High Impedance
	S / Video	Y : 1V(p-p) Positive (Negative sync provided) 75Ω C : 0.286V(p-p) (burst signal), 75Ω
	Component Cb/Cr	Y : 1V(p-p), 75Ω Cb : B-Y 0.7V(p-p), 75Ω / Cr : R-Y 0.7V(p-p), 75Ω
Output Terminal	**Video**	1V(p-p) 75Ω
	Audio(L/R)	500mVrms(-4dBs), Low Impedance
AV Compulink		Mono mini jack (φ3.5mm)
Headphone jack		Stereo mini jack (φ3.5mm)
Remote Control Unit		RM-C214 (AA/R06 / UM-3 , Dry cell battery × 2) : HV-L29PRO / HV-L29PRO/-A / HV-L29PRO/AU & HV-L29PRO/EE
		RM-C215 (AA/R06 / UM-3 , Dry cell battery × 2) : HV-L29PRO/HK

Design & specifications are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏦) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

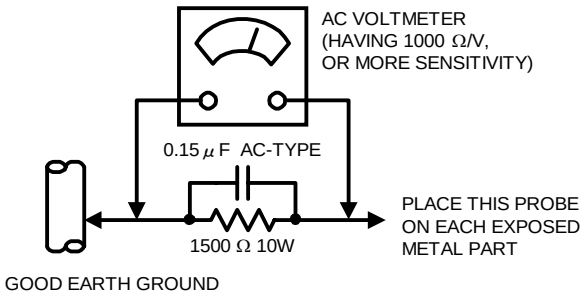
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



MAIN DIFFERENCE PART LIST

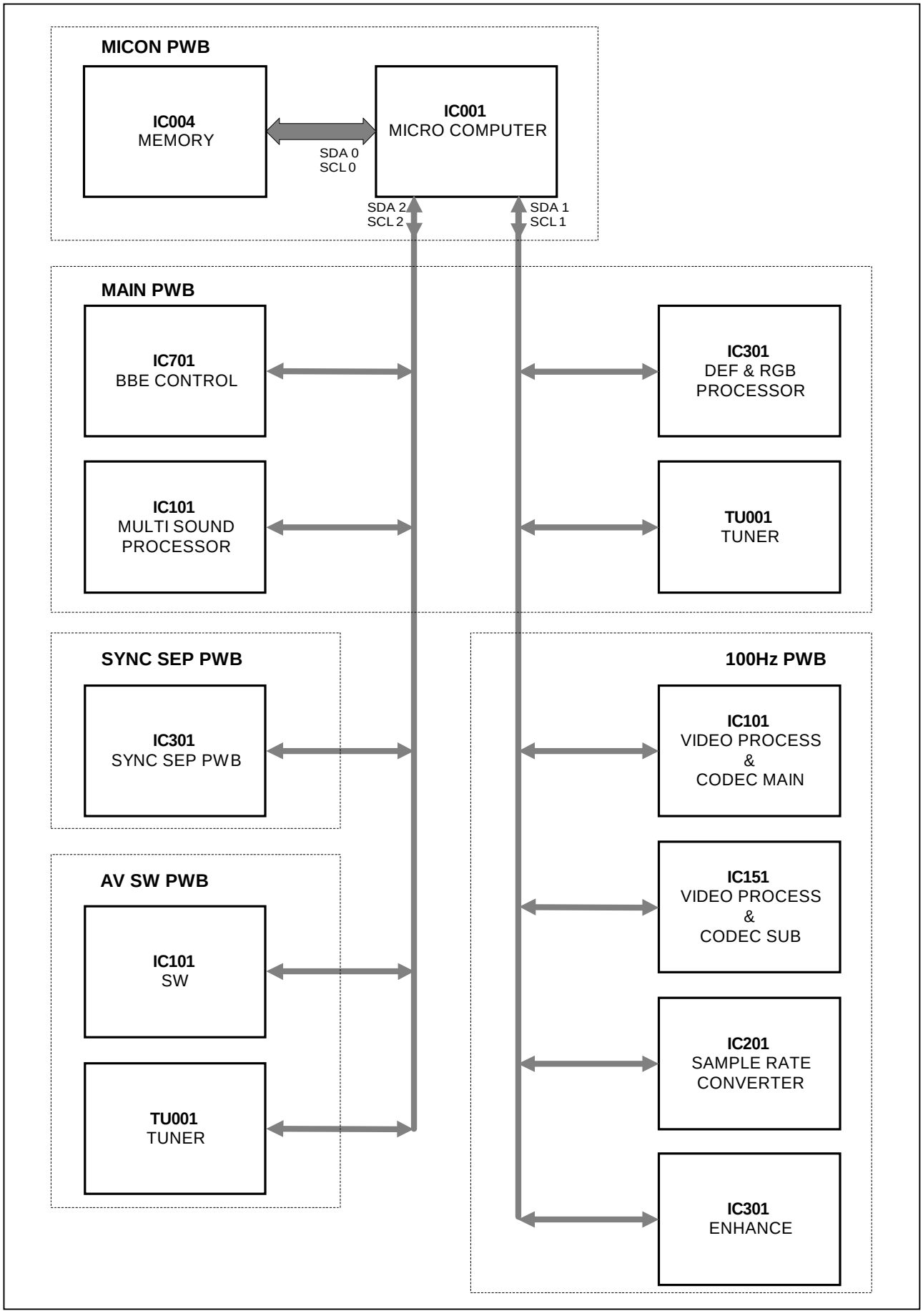
⚠	Part name \ Model name	HV-L29PRO	HV-L29PRO/HK	HV-L29PRO/I-A	HV-L29PRO/AU	HV-L29PRO/EE
	MICON PWB	SMF0M601A-H2	SMF0M602A-H2	SMF0M603A-H2	SMF0M601A-H2	SMF0M604A-H2
⚠	**POWER CORD**	QMP40D0-200J5	QMPN050-200-E2	QMPR010-200-E2	QMP2980-185J5	QMP40D0-200J5
⚠	**RATING LABEL**	LC20377-001B-H	LC20377-012B-H	LC20413-002B-H	LC20377-013B-H	LC20377-009B-H
⚠	**REMOTE CONTROL UNIT**	RM-C214-1C	RM-C215-1C	RM-C214-1C	←	←
⚠	**DIGEST MANUAL**	×	×	LCT0957-001A-H	×	×
⚠	**CONVERSION PLUG**	×	×	QAM0055-001	×	×
	WARRANTY CARD	×	×	×	BT-56001-2	BT-54012-2
	S CENTER LIST	×	×	×	BT-56002-2	×

FEATURES

- New chassis design enable use of an interactive on screen control.
- The TELETEXT SYSTEM has a built-in FASTEXT (UK system), and WST (world standard system) system.
  ∗ Except HV-L29PRO/HK.
- Pure FLAT CRT reproduce fine textured.
- Digi Pure pro : Auto digi pure with motion picture compensation.
- Because this TV unit corresponds to multiplex broadcast, users can enjoy music programs and sporting events with live realism. In addition, BILINGUAL programs can be heard in their original language.
- Built-in ECO (ECONOMY, ECOLOGY) MODE.
  In accordance with the brightness in a room, the brightness and/or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.

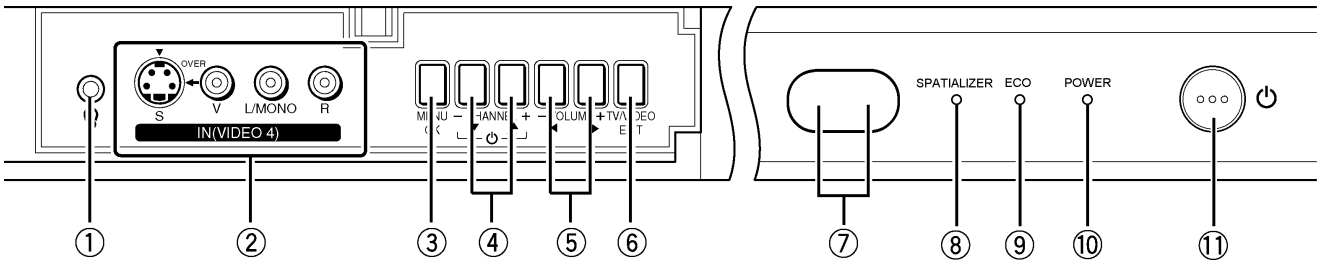
MC-Service

SYSTEM BLOCK DIAGRAM



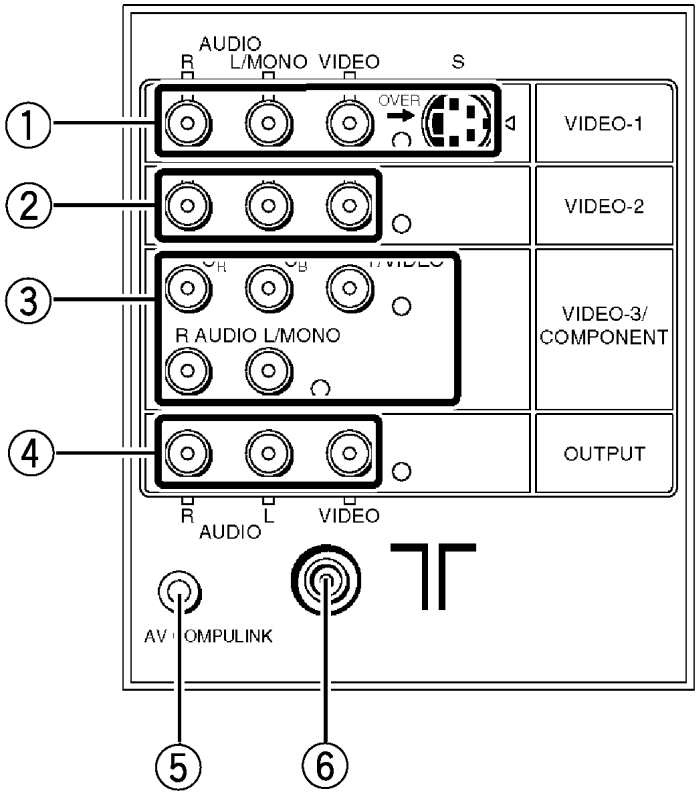
FUNCTIONS

■ Front Terminal & Control



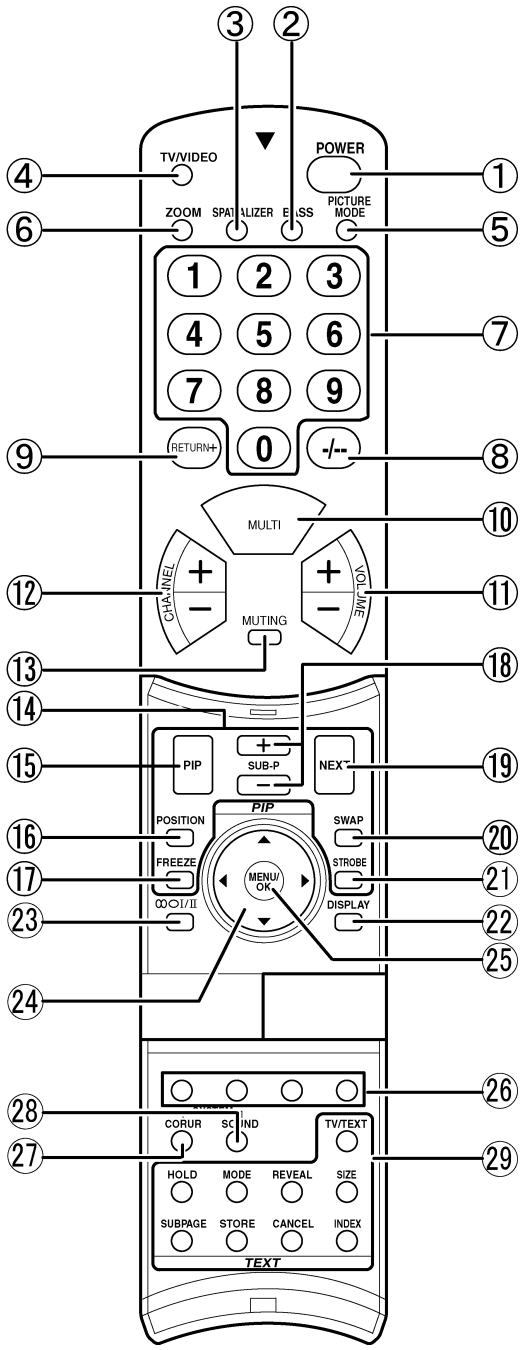
1 HEADPHONE jack
2 VIDEO-4 terminal (S-VIDEO / VIDEO / L/MONO / R)
3 MENU/OK Button
4 CHANNEL -/+ (MENU UP/DOWN) Button
5 VOLUME -/+ (MENU LEFT/RIGHT) Button
6 TV/VIDEO / EXIT Button
7 SENCER (Remote Control & ECO)
8 SPATIALIZER LAMP
9 ECO LAMP
A POWER LAMP
B POWER SW Button

■ Rear Terminal



1 VIDEO-1 (INPUT) terminal (S, V, L, R)
2 VIDEO-2 (INPUT) terminal (V, L, R)
3 VIDEO-3 (INPUT) terminal (V/Y, Cb, Cr, L, R) / COMPONENT
4 OUTPUT (AUDIO/VIDEO) terminal (V, L, R)
5 AV COMPULINK terminal
6 AERIAL socket

■ Remote Control Unit



1 POWER Key
2 BASS Key
3 SPATIALIZER Key
4 TV/VIDEO Key
5 PICTURE MODE Key
6 ZOOM Key
7 CHANNEL Key
8 -/-- Key
9 RETURN + Key
A MULTI Key
B VOLUME +/- Key
C CHANNEL +/- Key
D MUTING Key
E PIP MODE
F PIP Key
G POSITION Key
H FREEZE Key
I SUB P (PIP)+&- Key
J NEXT Key
K SWAP Key
L STROBE Key
M DISPLAY Key
N STEREO ○ Ⅰ/Ⅱ Key
(○○ : Stereo / ○ : Mono
Ⅰ : Bilingual (sub Ⅰ)
Ⅱ : Bilingual (sub Ⅱ))
O FUNCTION Key(▲/▼& ◀/▶)
P MENU/OK Key
Q COLOUR Key
R COLOUR SYSTEM Key
S SOUND SYSTEM Key
U TELETEXT Key
(Without HV-L29PRO/HK)

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power cord.
2. Remove the 16 screws marked Ⓐ as shown in the Fig. 1.
3. Withdraw the rear cover toward you.

REMOVING THE AV TERMINAL BOARD

- After removing the rear cover.

1. Remove the 5 screws marked Ⓑ as shown in the Fig. 1.
2. Withdraw the AV terminal board toward you.

REMOVING THE CHASSIS

- After removing the rear cover.

1. Slightly raise the both sides of the chassis by hand and remove the 2 claws under the both sides of the chassis from the front cabinet.
2. Withdraw the chassis backward.
   (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE DOME SPEAKER BOX / SPEAKER

- After removing the rear cover.

1. As shown in Fig. 1, remove the 2 screws marked Ⓒ, then remove the dome speaker box.
2. Remove the 5 screws marked Ⓓ as shown in the Fig.2, then remove the dome box.
3. Remove the 4 screws marked Ⓔ as shown in the Fig.2, then remove the HONE RING.
4. Remove the 4 screws marked Ⓕ as shown in the Fig.2, then remove the speaker.
5. Follow the same steps when removing the other hand dome speaker box / speaker.

NOTE : When removing the screws marked Ⓒ of the dome speaker box, remove the lower side screw first, and then remove the upper one.

REMOVING THE TWEETER SPEAKER

- After removing the rear cover.

1. As shown in Fig. 2, remove the many screws from HONE side, then remove the tweeter speaker screws to remove it.

CHECKING THE PW BOARD

To check the back side of the PW Board.

1) Pull out the chassis. (Refer to REMOVING THE CHASSIS).
2) Erect the chassis vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

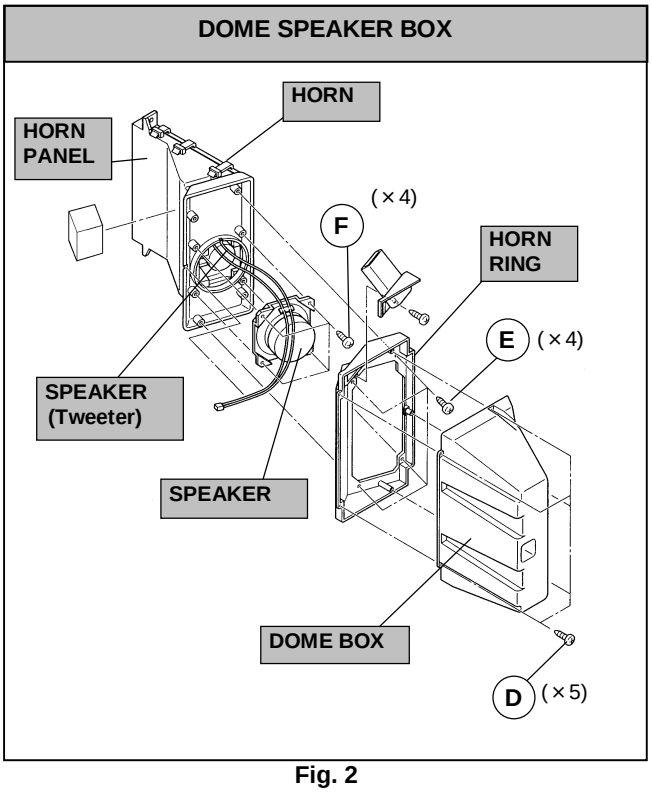


Fig. 2

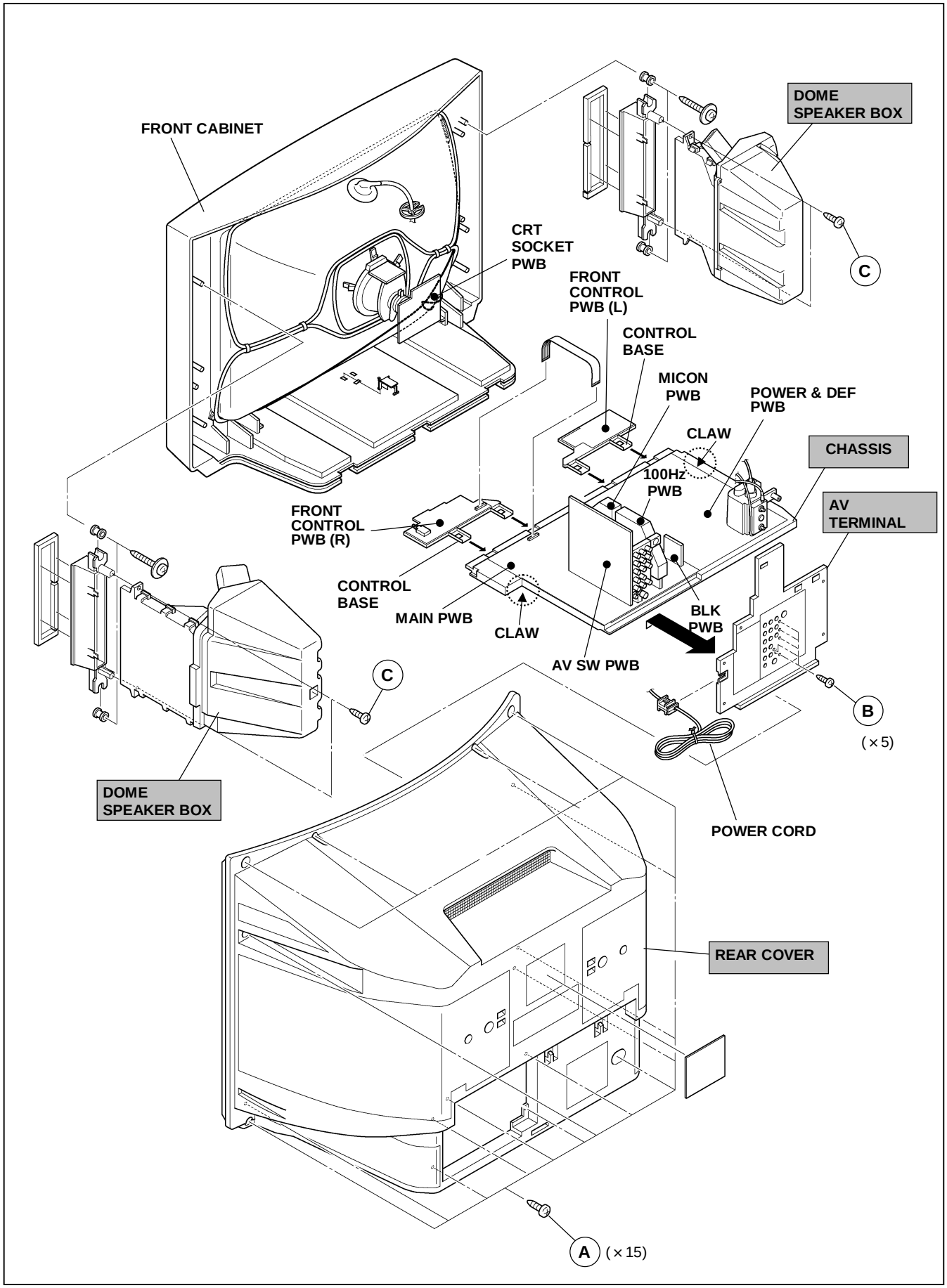

FRONT CABINET
DOME SPEAKER BOX
CRT SOCKET PWB
FRONT CONTROL PWB (L)
CONTROL BASE
MICON PWB
POWER & DEF PWB
CLAW
CHASSIS
100Hz PWB
AV TERMINAL
FRONT CONTROL PWB (R)
CONTROL BASE
MAIN PWB
CLAW
BLK PWB
AV SW PWB
C
B
(×5)
DOME SPEAKER BOX
POWER CORD
REAR COVER
A
(×15)

Fig. 1

REMOVING THE CRT

* Replacement of the CRT should be performed by 2 or more persons.
- After removing the cover, chassis etc.,

1. Putting the CRT change table on soft cloth, the CRT change table should also be covered with such soft cloth (shown in Fig.3).
2. While keeping the surface of CRT down, mount the TV set on the CRT change table balanced will as shown in Fig.4.
3. Remove 4 screws marked by arrows with a box type screw driver as shown in Fig.4.

- Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.

4. After 4 screws have been removed, put the cabinet slowly on cloth (At this time, be carefully so as not to damage the front surface of the cabinet) shown in Fig.5.

- The CRT should be assembled according to the opposite sequence of its dismounting steps.

* The CRT change table should preferably be smaller that the CRT surface, and its height be about 35cm. (Fig.3)
* About CRT Spacer (Fig.4)
  An appropriate CRT spacer should be used in the corresponding CRT in accordance with the type of the CRT.
  When a CRT is replaced, special attention should be paid to this matter.

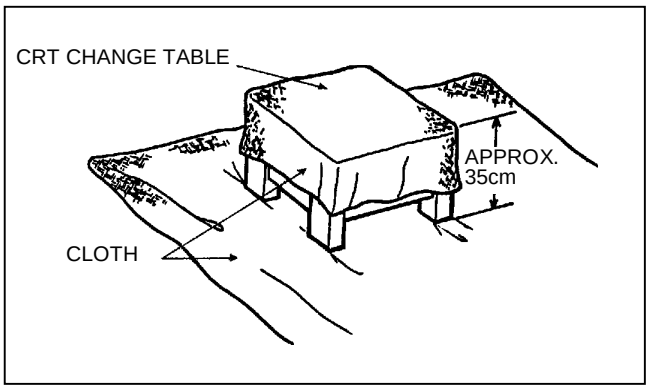


Fig. 3

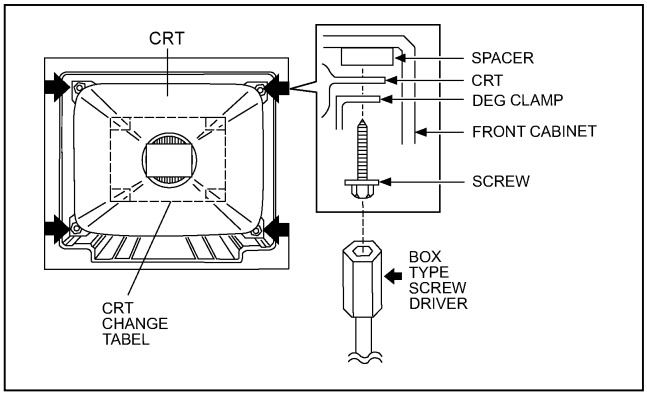


Fig. 4

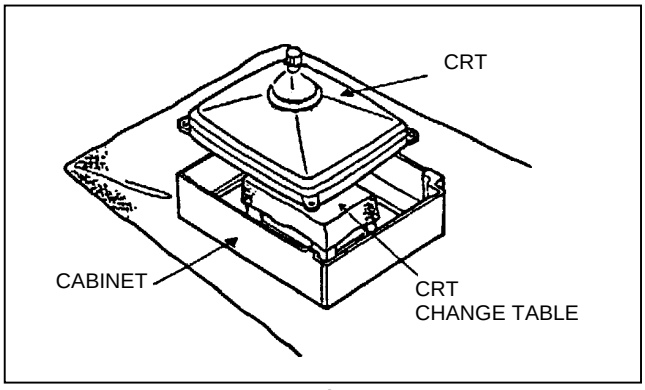


Fig. 5

COATING OF SILICON GREASE FOR ELECTRICAL INSULATION ON THE CRT ANODE CAP SECTION.

- Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismounting them, be sure to coat silicon grease for electrical insulation as shown in Fig.6.
  Wipe around the anode button with clean and dry cloth. (Fig.6)
  Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases dose not stick to the anode button. (Fig.7)

★ Silicon grease product No. KS - 650N

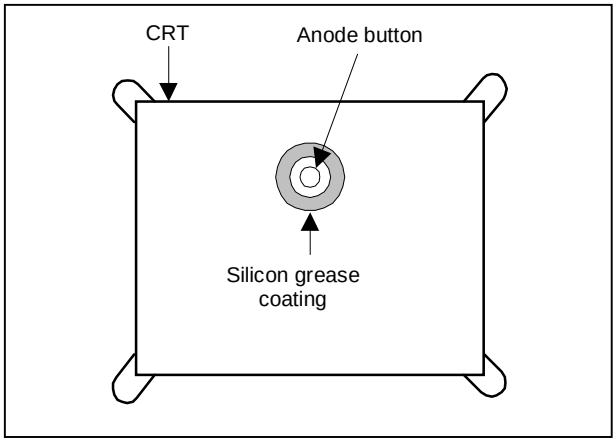


Fig. 6

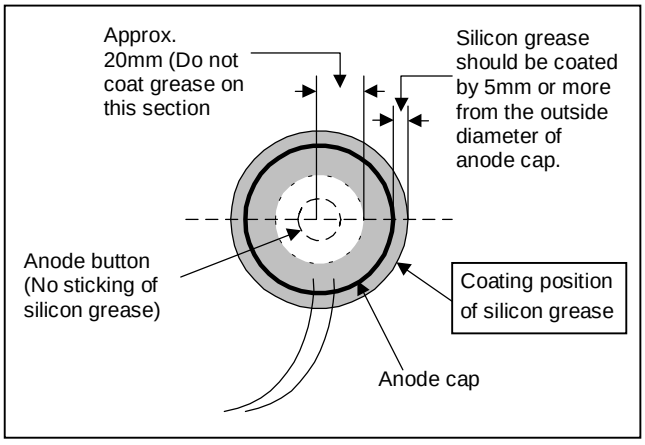


Fig. 7

REPLACEMENT OF MEMORY ICs

1. Memory ICs

This TV use memory ICs. In the memory ICs, there are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

(1) **Power off**
Switch the power off and unplug the power cord from the wall outlet.

(2) **Replace ICs**.
Be sure to use memory ICs written with the initial data values.

(3) **Power on**
Plug the power cord into the wall outlet and switch the power on.

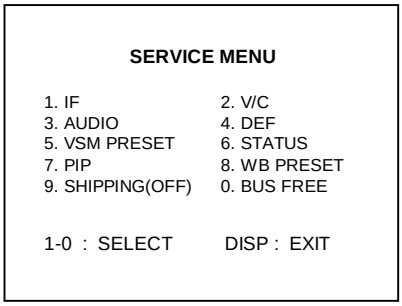


Fig.1

(4) **Check and set SYSTEM CONSTANT SET:**

✱ It must not adjust without signal.

1) Press the DISPLAY key and the PICTURE TUBE key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, press the DISPLAY key and PICTURE TUBE key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the FUNCTION UP/DOWN key, and set the correct value with the FUNCTION -/+ key.
5) Press the MENU(OK) key to memorize the setting value.
6) Press the INFORMATION key, and return to the normal screen.

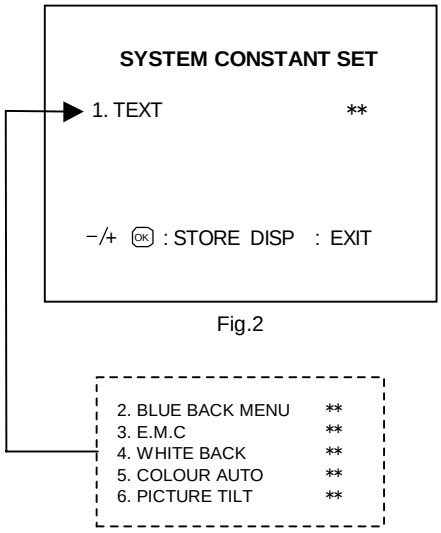


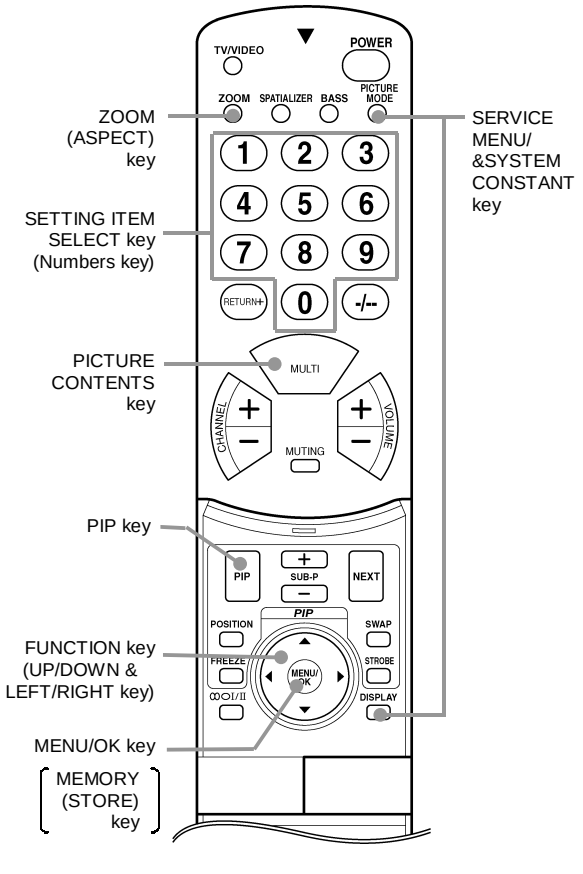
Fig.2

(5) **Setting of receive channels**
Set the receive channel.
For setting, refer to the OPERATING INSTRUCTIONS.

(6) **Setting of SERVICE MENU**
Verify the setting items of the **SERVICE MENU** of Table 2, and reset where necessary.
For setting, refer to the SERVICE ADJUSTMENTS.

(7) **User settings**
Check the user setting values of Table 3, and if setting value is different, set the correct value.
For setting, refer to the OPERATING INSTRUCTIONS.

SERVICE MENU KEY



SETTING VALUES OF SYSTEM CONSTANT SET (TABLE 1)

MODEL No. / Setting item	HV-L29PRO	HV-L29PRO/-A	HV-L29PRO/HK	HV-L29PRO/AU	HV-L29PRO/EE
1. TEXT	YES	YES	NO	YES	YES
2. BLUE BACK MUTE	NO	↑	↑	NO	NO
3. E. M. C	↑	NO	↑	↑	↑
4. WHITE BACK	↑	↑	↑	↑	↑
5. COLOUR AUTO	↑	YES	↑	↑	↑
6. PICTURE TILT	YES	↑	YES	YES	YES

SERVICE MENU SETTING ITEMS (TABLE 2)

Setting item	Setting value	Setting item	Setting value
1. IF	1. VCO 2. ATT ON / OFF	5. VSM PRESET BRIGHT STANDARD SOFT	1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. TINT
2. V / C	1. RGB BLK 2. WDR R 3. WDR G 4. WDR B 5. BRIGHT 6. CONTRAST 7. COLOUR 8. TINT 9. SHARP 10. VCO ADJ. 11. VID ADJ. 12. SYNC SLICE 13. A MOVIE	6. STATUS **(Do not adjust)**	1. SOFT 2. TELETEXT 3. ASPECT
3. AUDIO **(Do not adjust)**	1. ERR LIMIT 2. A2 ID THR 3. QUASI	7. PIP	1. PIP VCO ADJ 2. PIP VID AGC 3. PIP SYNC SLICE
4. DEF.	1. V-SHIFT 2. V-SIZE 3. H-CENT 4. H-SIZE 5. TRAPEZ 6. EW-PIN 7. COR-PIN 8. COR-UP 9. COR-LO 10. ANGLE 11. BOW 12. V-S.CR 13. V.LIN 14. V.BLK-UP	8. WB PRESET	1. WDR R 2. WDR G 3. WDR B

USER SETTING VALUES (TABLE 3)

Setting item	Setting value	Setting item	Setting value
MAIN POWER SW	OFF	SUB POWER	ON
SHIPPING CHANNEL	PR1	DISPLAY	INDICATED
PRESET CHANNEL	See ; OPERATING INSTRUCTIONS.	VOLUME LEVEL	10
PICTURE SETTING		**INSTALL**	
PICTURE MODE	BRIGHT	LANGUAGE	ENGLISH
WHITE MODE	COOL	EDIT	● PRESET CHANNEL ONLY
ECO MODE	OFF		● OTHER : NON (SPACE)
PICTURE FEATURES		**FEATURES**	
DIGITAL VNR	AUTO	SLEEP TIMER	OFF
DIGIPURE PRO	AUTO	BLUE BACK	ON
COLOUR SYSTEM	● TV : Depends on PR/CH ● EXT : AUTO	AUTO SHUT OFF	OFF
		VIDEO-3 SETTING	COMPONENT
ZOOM	REGULAR	CHILD LOCK	OFF (for all the channels)
PICTURE TILT	CENTER	CHANNEL GUARD	ALL CH : OFF
SOUND			
BASS	CENTER	BEE	ON
TREBLE	CENTER	SUPER BASS	ON
BALANCE	CENTER	AI VOLUME	ON
SPATIALIZER	OFF		

SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the TV and measuring instrument for warming up for at least 30 minutes before starting adjustment.
5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
6. **Never touch parts** (such as variable resistors, transformers and condensers) **not shown in the adjustment items of this service adjustment.**
7. Preparation for adjustment (presetting):
   Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT:
   - Setting position

PICTURE MODE (VSM)	STANDARD
SLEEP TIMER	OFF
BALANCE	CENTER
ECO	OFF
ZOOM	REGULAR

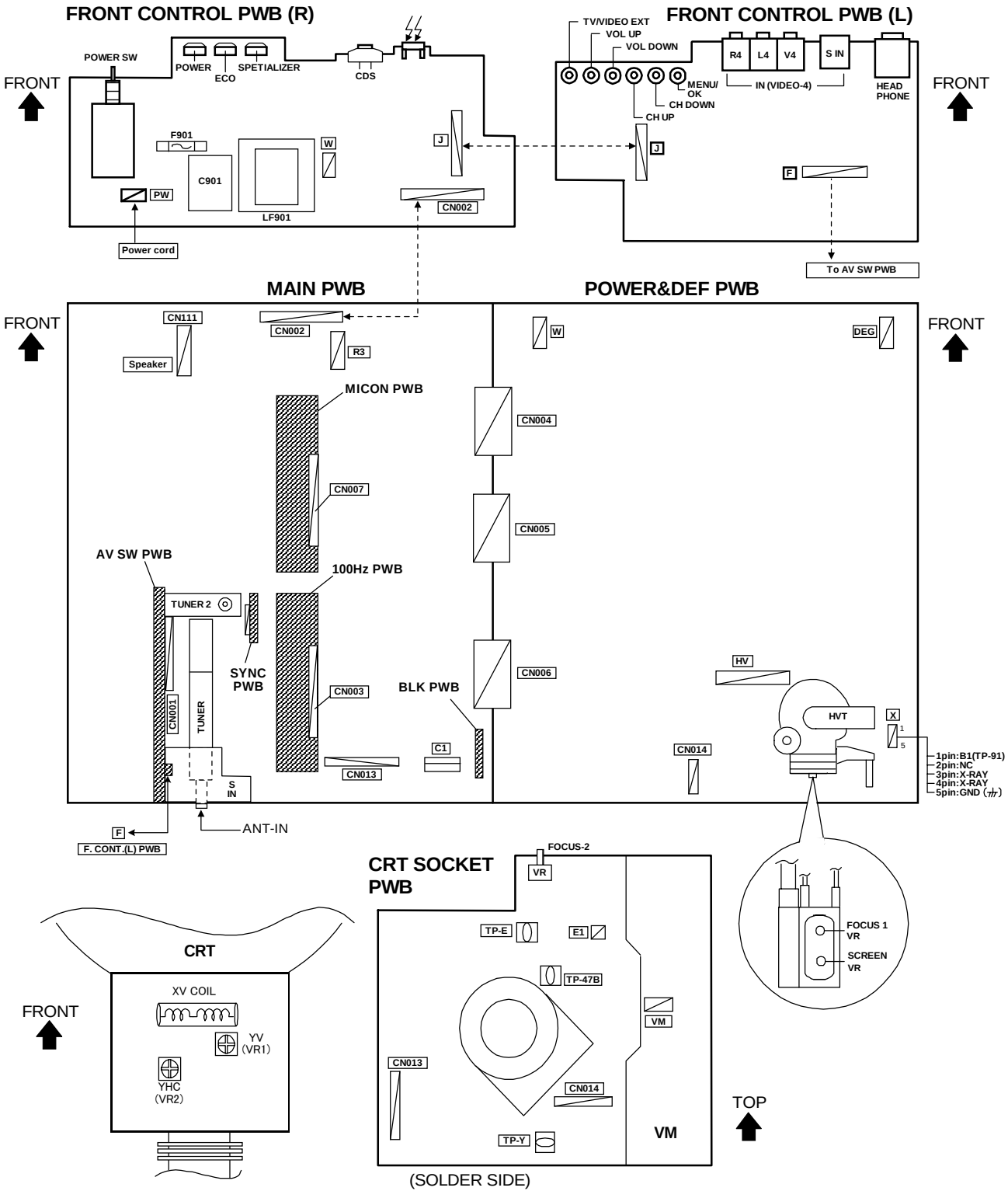
MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

- Checking items.
- Adjustment of FOCUS.
- VSM preset setting.
- VIDEO / CHROMA circuit adjustment.
- DEFLECTION circuit adjustment.
- AUDIO circuit adjustment. **(Do not adjust)**

ADJUSTMENT LOCATIONS



BASIC OPERATION SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

(1) **1. IF** ····· This mode adjusts the setting values of the IF circuit.
(2) **2.V/C** ····· This mode adjusts the setting values of the VIDEO / CHROMA circuit.
(3) **3.AUDIO** ····· This mode adjusts the setting values of the SOUND circuit. (Do not adjust)
(4) **4.DEF** ····· This mode adjusts the setting values of the DEFLECTION circuit for each aspect mode given below.

ZOOM (ASPECT)	V. FREQ.
REGULAR	100Hzi / 60HzP
ZOOM	↑
16 : 9	↑

(5) **5.VSM PRESET** ····· This mode adjusts the initial setting values of Bright, Standard & soft.
(VSM : Video Status Memory)
(6) **6.STATUS** ····· It is no requirement to adjustment.
(7) **7.PIP** ····· This mode adjusts the setting values of the PIP circuit. (PIP : Picture In Picture)
(8) **8.WB PRESET** ····· This mode adjusts the setting values of the WHITE BALANCE.
(9) **9.SHIPPING(OFF)** ····· This mode adjusts the setting values of the channel presettings.
If you turn the SHIPPING position set ON.
This setting becomes channel presetting automatically.
Also you turn the TV power off, this setting become OFF position automatically.
(10) **0.BUS FREE** ····· It is not requirement to adjustment.

3. BASIC OPERATION OF SERVICE MENU

(1) **How to enter SERVICE MENU**

Press the PICTURE MODE key and the DISPLAY key of the REMOTE CONTROL UNIT simultaneously, and the SERVICE MENU screen of Fig. 1 will be displayed.

SERVICE MENU

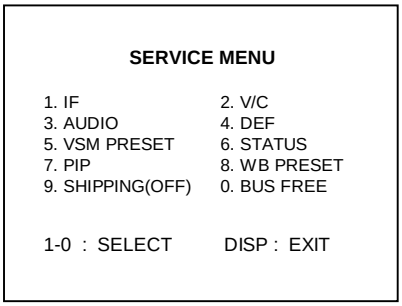


Fig.1

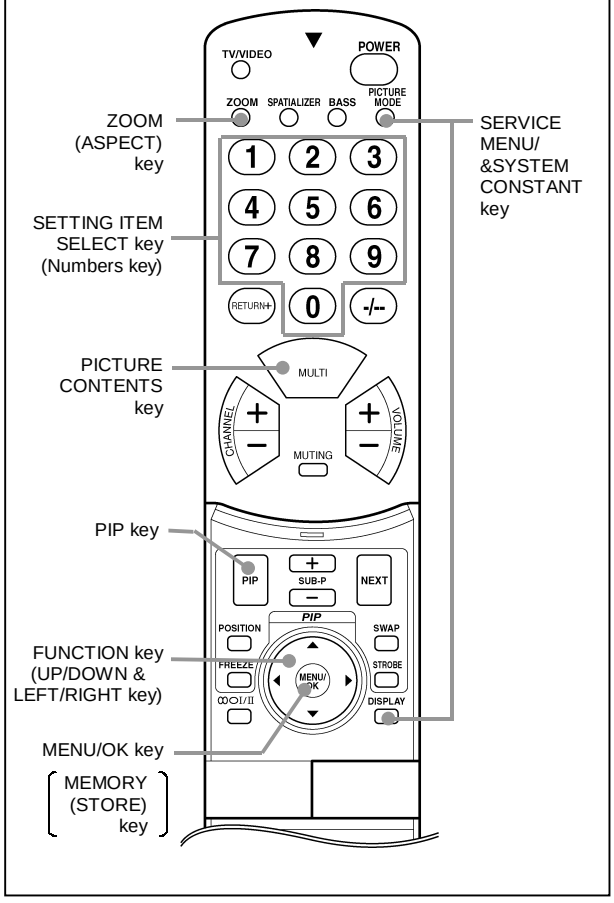
(2) **Selection of SUB MENU SCREEN**

Press one of keys 1～0 of the REMOTE CONTROL UNIT and select the SERVICE MENU SCREEN (See Fig. 3), form the SERVICE MENU.

SERVICE MENU → SUB MENU

1. IF
2. V / C
3. AUDIO (Do not adj.)
4. DEF.
5. VSM PRESET
6. STATUS (Do not adj.)
7. PIP
8. WB PRESET
9. SHIPPING (OFF)
0. BUS FREE

SERVICE MENU KEY



SERVICE MENU SCREEN

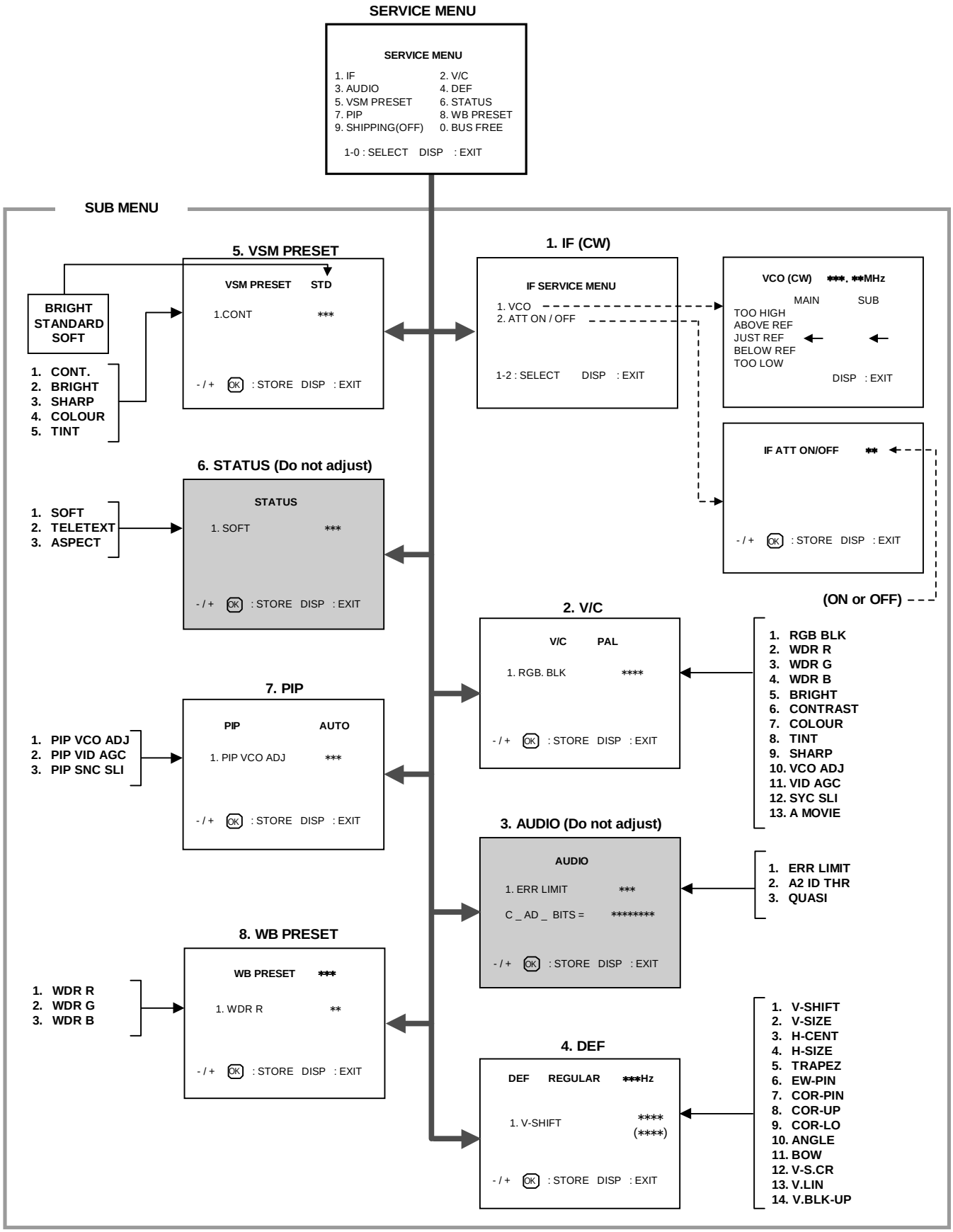


Fig. 3

(3) **Method of Setting**

● Method of Setting **1.IF**

[VCO] ····· ∗ It must not adjust without signal

① 1 Key····· Select 1.IF.

② 1 Key ····· Select 1. VCO (CW)
Check the arrow position between the ABOVE REF. and BELOW REF.

③ 2 Key····· Select 2.ATT ON/OFF (Strong Electric Field : ON / Generally Electric Field : OFF)

④ DISPLAY(DISP) Key····· Return to the SERVICE MENU screen.

● Method of setting **2.V/C, 4.DEF**, **5.VSM PRESET, 7.PIP and 8.WB PRESET.**

① 2, 4, 5, 7 & 8 Key····· Select one from **2. V/C, 4. DEF, 5. VSM PRESET, 7.PIP & 8.WB PRESET.**

② FUNCTION UP/DOWN Key····· Select setting items.

③ FUNCTION -/+····· Set (adjust) the setting values of the setting items.

④ MENU (OK) Key ····· Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key - if you do, the values will not be stored in memory.)

⑤ DISPLAY (DISP) Key ····· Return to the **SERVICE MENU** screen.

● **3. AUDIO, 6. STATUS, 9. SHIPPING(OFF) & 0. BUS FREE.**
It is not requirement to adjustment.

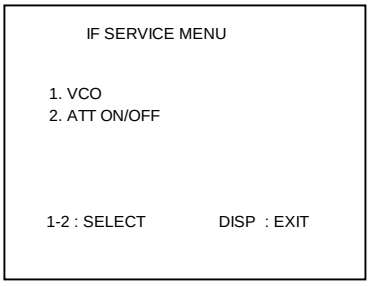
(4) **Release of SERVICE MENU**

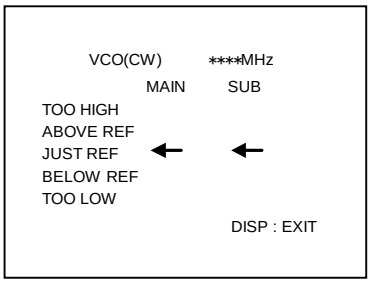
1) After completing the setting, return to the SERVICE MENU, then again press the DISPLAY (DISP) key.

ADJUSTMENT

CHECKING ITEM

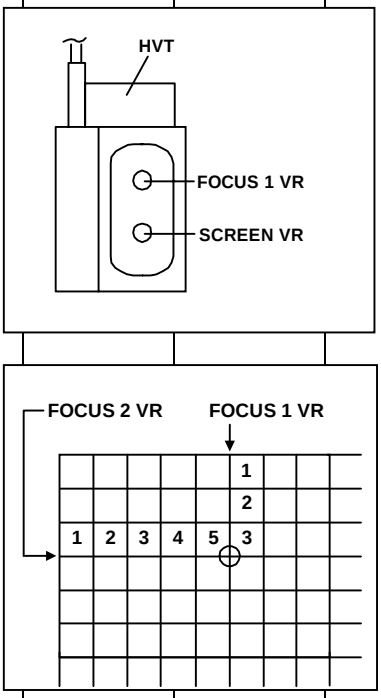
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	**Signal Generator** **DC voltmeter** **Remote Control unit**	**TP-91(B1)** **TP-E(⏚)** **[X connector on POWER DEF PWB]**	**1. RGB BLK**	1. Receive any broadcast. 2. Press the ZOOM key and select the FULL mode. 3. Select 2. V/C from the SERVICE MENU. 4. Select 1. RGB BLK with function UP / DOWN key. 5. Press the function (▶) key to find the cut off screen (Black screen). 6. Connect a DC voltmeter to TP-91(B1) and TP-E(⏚). 7. Make sure that the voltage is DC139.9 ±2.0V. 8. Press the function (◀) key to return to service menu.
Check of High Voltage	**Signal Generator** **DC volunteer** **Remote Control unit**	**CRT anode** **Chassis GND**	**1. RGB BLK**	1. Receive any broadcast. 2. Press the ZOOM key and select the FULL mode. 3. Select 2. V/C from the SERVICE MENU. 4. Select 1. RGB BLK with function UP / DOWN key. 5. Press the function (▶) key to find the cut off screen (Black screen). 6. Connect a DC voltmeter to CRT ANODE and chassis GND. 7. Make sure that the voltage is DC 32.0kV $^{+1kV}_{-1.5kV}$. 8. Press the function (◀) key to return to service menu. ∗ Remove the probe before removing the earth clip.
Check of VCO	**Remote control unit**		**1. VCO** **2. ATT ON/OFF**	● Under normal conditions, no adjustment is required. ● Confirmation adjustment. 1. Select 1.IF from the SERVICE MENU. 2. Then select 1.VCO from the IF SERVICE MENU. 3. Receive any broadcast. 4. Check the MAIN arrow (←) position between the ABOVE REF. and BELOW REF. 5. Press the MENU (OK) key and receive any broadcast with PIP Button. 6. Check the SUB arrow (←) position between the ABOVE REF and BELOW REF. ∗ The arrow (←) position means AFC voltage level. ∗ **2. ATT ON/OFF** : Generally Electric Field : **OFF** : Strong Electric Field : **ON** ∗ Change the MAIN and SUB by MENU/OK key .

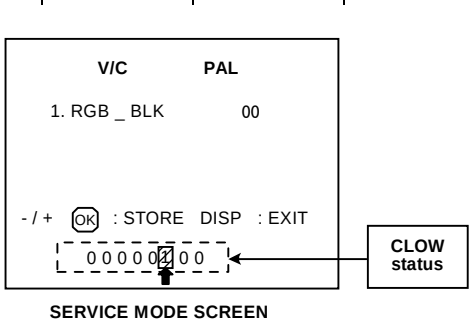




ADJUSTMENT OF FOCUS & SCREEN

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	**Signal generator**		**FOCUS 1 VR(In HVT)** **FOCUS 2 VR** **(IN CRT SOCKET PWB)**	1. Receive a cross-hatch signal. 2. Press the ZOOM key and select the regular mode. 3. By turning the FOCUS 1 VR, adjust the to make the vertical lines as fine and sharp as possible. 4. By turning the FOCUS 1 VR, adjust the picture so that the 5th vertical line from left side of the cross-hatch picture becomes thinnest. 5. By turning the FOCUS 2 VR(In CRT SOCKET PWB), adjust the 3rd horizontal line from the upper side may become uniform at the line center and its periphery. 6. Carry out adjustment by repeating the steps 3, 4 and 5 about. 7. Make sure that the screen is darkened, the lines remain in good focus.
Adjustment of SCREEN VR	**Signal generator**		**SCREEN VR (In HVT)**	1. Receive a whole black signal . 2. Press the ZOOM key and select the regular mode. 3. Select 2. V/C from the SERVICE MENU. 4. Rotate the SCREEN VR (In HVT) clockwise(from 1→0→1) from the full counterclockwise **slowly** and stop it at the point where “CLOW” status (marked ⬆ in Fig.) changes from 1 to 0 (which is indicated at the 3rd column from the right.). ∗ “CLOW” : control loopout of window.





SERVICE MODE SCREEN

VSM PRESET SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	**Remote control unit**		**1.CONT.** **2. BRIGHT** **3. SHARP** **4. COLOUR** **5. TINT**	1. Select 5.VSM PRESET from the SERVICE MENU. 2. Select STD with the PICTURE MODE key of the remote control unit. 3. Adjust the function UP/DOWN and LEFT/RIGHT key to bring the set values of 1.CONT ～ 5. TINT to the values shown in the table. 4. Press the MENU/OK key and memorize the set value. 5. Respectively select the VSM PRESET mode for REGULAR and BRIGHT, and make similar adjustment as in 3 above. 6. Press the MENU/OK key and memorize the set value. ＊ Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

Setting item / VSM preset mode	1. CONT.	2. BRIGHT	3. SHARP	4. COLOUR	5. TINT
BRIGHT	+16	0	-10	+3	0
STANDARD	+7	0	-10	0	0
SOFT	0	0	-12	-2	0

SETTING VALUES OF VSM PRESET

VIDEO/CHROMA CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

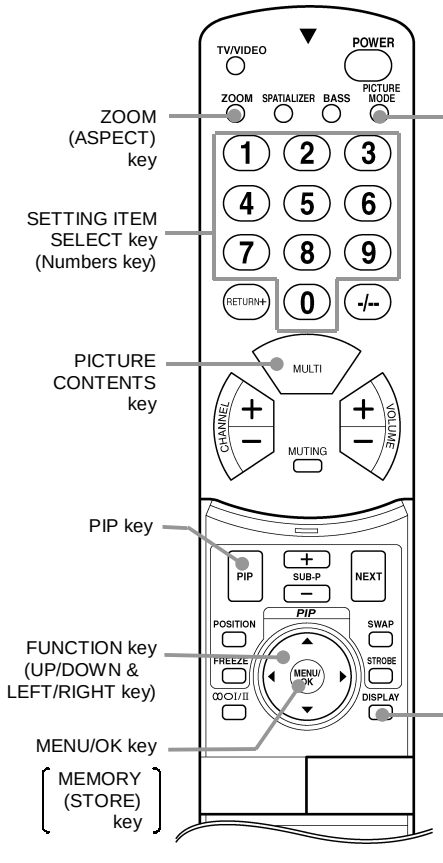
● marked ✻ :Do not adjust

Setting item \ Colour system	Initial setting value			Setting item \ Colour system	Initial setting value		
	PAL	SECAM	NTSC		PAL	SECAM	NTSC
RGB BLK	——	——	——	8.TINT	——	——	000
2.WDR R	000	←	←	9.SHARP	✻ +007	←	←
3.WDR G	000	←	←	10.VCO ADJUSTMENT	Automatically optimized after adjustment		
4.WDR B	✻ -010	←	←	11.VID AGC	✻ 000	←	←
5.BRIGHT	000	←	←	12.SYC SLI	✻ +007	←	←
6.CONTRAST	000	←	←	13.A MOVIE	✻ +001	←	←
7.COLOUR	000	000	000				

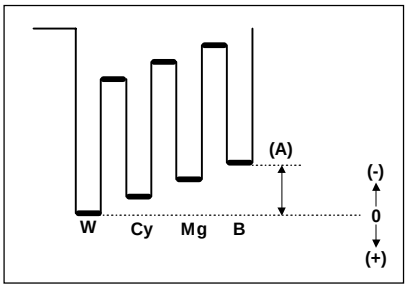
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (High-Light)	**Signal generator** **Remote control unit**		**2.WDR R** **3.WDR G**	● Set the PICTURE MODE to COOL. 1. Receive a black and white signal (colour off). 2. Select 2. V/C from the SERVICE MENU. 3. Modify 2. WDR R and 3.WDR G data to adjust the white balance (high light). 4. Press the MENU/OK key and memorize the set value. 5. Change the contrast and brightness with the remote control up & down from low–light to high–light and check that the tracking of the white balance is good.
Adjustment of SUB BRIGHT	**Remote control unit**		**5.BRIGHT**	1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 5.BRIGHT with the function UP/DOWN key. 4. Set the initial setting value with the function LEFT/RIGHT key. 5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. 6. Press the MENU/OK key and memorize the set value.
Adjustment Of SUB CONTRAST.	**Remote control unit**		**6.CONTRAST**	1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 6.CONTRAST with the function UP/DOWN key. 4. Set the initial setting value with the function LEFT/RIGHT key. 5. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. 6. Press the MENU/OK key and memorize the set value.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR I	**Remote control unit**		**7.COLOUR (PAL/SECAM/NTSC)**	**[Method of adjustment without measuring instrument]**
			PAL COLOUR	(PAL COLOUR) 1. Receive PAL broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the function UP/DOWN key. 4. Set the initial setting value for PAL COLOUR with the function LEFT/RIGHT key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the MENU/OK key and memorize the set value.
			SECAM COLOUR	(SECAM COLOUR) 1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR in the same manner as for above.
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above. (NTSC 4.43 COLOUR) 1. Receive a NTSC 4.43MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of 4.43 COLOUR in the same manner as for above.

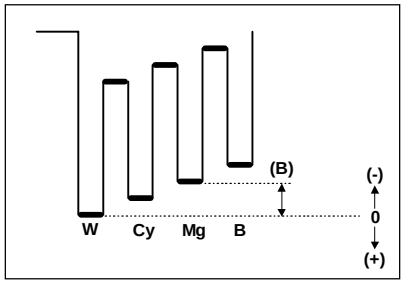
SERVICE MENU KEY



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR Ⅱ	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47B** **TP-E(⏚)** **[CRT SOCKET PWB]**	**7.COLOUR (PAL/SECAM/NTSC)**	**[Method of adjustment using measuring instrument]**
			PAL COLOUR	(PAL COLOUR) 1. Receive a PAL full field colour bar signal(75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the function UP/DOWN key. 4. Set the initial setting value of PAL COLOUR with the function LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47B and TP-E 6. Adjust PAL COLOUR and bring the value of **(A)** in the illustration to **0V** (voltage difference between white (w) and blue (B)). 7. Press the MENU/OK key and memorize the setting value.
			SECAM COLOUR	(SECAM COLOUR) 1. Receive a SECAM full field colour bar signal(75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the function UP/DOWN key. 4. Set the initial setting value of SECAM COLOUR with the function LEFT/RIGHT key. 5. Adjust SECAM COLOUR and bring the value of **(A)** of the illustration to **–6V**(W～B). 6. Press the MENU/OK key and memorize the setting value.
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the function UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 COLOUR with the function LEFT/RIGHT key. 5. Adjust NTSC 3.58 COLOUR and bring the value of **(A)** of the illustration to **-5V**(W～B). 6. Press the MENU/OK key and memorize the setting value.
				(NTSC 4.43 COLOUR) 1. Input a NTSC 4.43MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the function UP/DOWN key. 4. Set the initial setting value of NTSC 4.43 COLOUR with the function LEFT/RIGHT key. 5. Adjust NTSC 4.43 COLOUR and bring the value of **(A)** of the illustration to **-5V**(W～B). 6. Press the MENU/OK key and memorize the setting value.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB TINT	**Remote control unit**		**8.TINT**	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 TINT	(NTSC 3.58 TINT) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 8.TINT with the function UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 TINT with the function LEFT/RIGHT key. 5. If you cannot get the best TINT with the initial setting value, make fine adjustment until you get the best TINT. 6. Press the MENU/OK key and memorize the set value.
			NTSC 4.43 TINT	(NTSC 4.43 TINT) 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB TINT Ⅱ	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47B TP-E(⏚) [CRT SOCKET PWB]**	**8.TINT**	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 TINT	(NTSC 3.58 TINT) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 8.TINT with the function UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 TINT with the function LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47B and TP-E 6. Adjust NTSC 3.58 TINT to bring the value of **(B)** in the illustration to **-12V** (voltage difference between white (W) and magenta(Mg)). 7. Press the MENU/OK key and memorize the setting value
			NTSC 4.43 TINT	(NTSC 4.43 TINT) 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of VCO for colour decoder	**Signal generator** **Remote control unit**		**10. VCO**	**[For main picture]** 1. Input a PAL full field colour bar signal (75% white) from EXT terminal. 2. Select 2. V/C from the SERVICE MENU. 3. Then Select 10. VCO adjustment with the function UP/DOWN key. 4. Press the MENU/OK key. ∗ When the MENU/OK key is pressed, VCO for colour decoder will be automatically set at the respective values. **[For PIP]** 5. Select 7.PIP from the SERVICE MENU. 6. Then select 1.PIP VCO ADJ with the function UP/DOWN key. ∗ When the MENU/OK key is pressed, VCO for colour decoder will be automatically set at the respective values.



DEF. CIRCUIT ADJUSTMENT

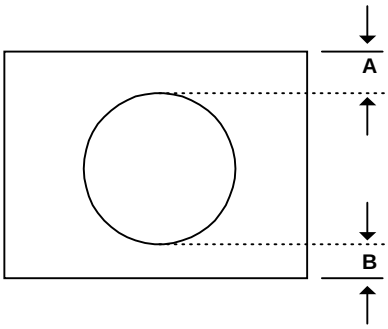
There are 3 aspect modes (①REGULAR, ②ZOOM & ③16 : 9) of the adjustment (1) 100Hz i mode & (2) 60Hz p mode ····· depending upon the kind of signals (vertical frequency 100Hzi / 60HZp).

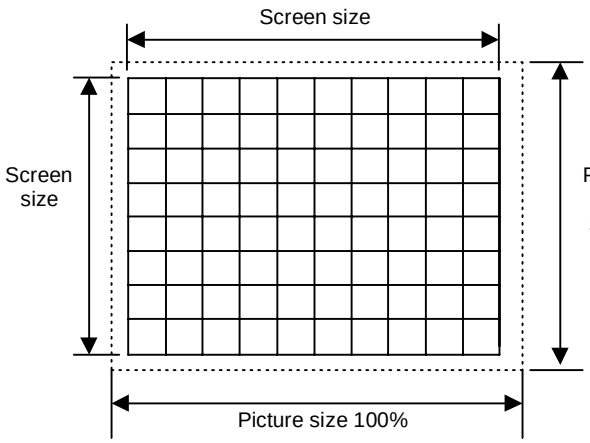
- **When the 100Hz REGULAR mode has been established, the setting of other modes will be done automatically. However, if the picture quality has not been optimized, adjust each mode again, respectively.**
- **The adjustment using the remote control unit is made on the basis of the initial setting values.**
- **The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**

Setting item	Initial setting value					
	REGULAR		ZOOM		16 : 9	
	100Hz i	60Hz p	100Hz i	60Hz p	100Hz i	60Hz p
1. V- SHIFT	-3	+8	0	0	0	0
2. V-SIZE	+5	0	0	0	-15	0
3. H-CENT	-11	+3	0	0	0	0
4. H-SIZE	-11	-5	0	0	-3	+3
5. TRAPEZ	-16	+17	0	0	0	0
6. EW-PIN	-36	0	0	0	0	0
7. COR-PIN	0	0	0	0	0	0
8. COR-UP	0	0	0	0	0	0
9. COR-LO	-10	0	0	0	0	0
10. ANGLE	0	0	0	0	0	0
11. BOW	0	0	0	0	0	0
12. V-S.CR	+5	0	0	0	0	0
13. V-LIN	-6	+4	0	0	0	0
14. V.BLK-UP	80	0	0	0	-94	-10

FIXED VALUE : **Do not move.**

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-SHIFT	**Signal generator** **Remote control unit**		**1.V- SHIFT**	[REGULAR mode] 1. Receive a circle pattern signal of vertical frequency 50Hz. 2. Select 4.DEF from the SERVICE MENU. 3. Select 1.V-SHIFT with the function UP/DOWN key. 4. Adjust V-SHIFT to make **A = B**. 5. Check the adjustment value above in other zoom mode. If it is a wrong adjustment, re-adjust in ZOOM mode and adjust by 1. V-SHIFT and 13.V-LIN. 6. Press the MENU/OK key and memorize the set value.
Adjustment of V-SIZE			**2.V-SIZE**	7. Receive a cross-hatch signal. 8. Select 2.V-SIZE and set the initial setting value. 9. Adjust V-SIZE and make sure that the vertical screen size of the picture size is in the bellow table. 10. Press the MENU/OK key and memorize the set value. 11. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the vertical screen size is in the below table. 12. Press the MENU/OK key and memorize the set value.



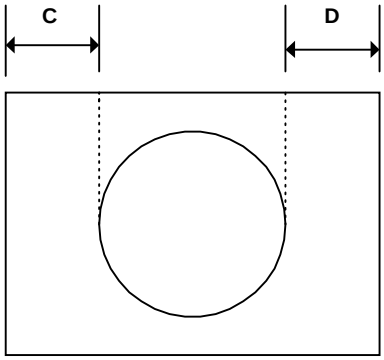


ASPECT / SCREEN POSITION	ZOOM		
	REGULAR	**ZOOM**	**16 : 9**
TOP	92%	——— (FIXED)	——— (FIXED)
BOTTOM	92%	——— (FIXED)	——— (FIXED)

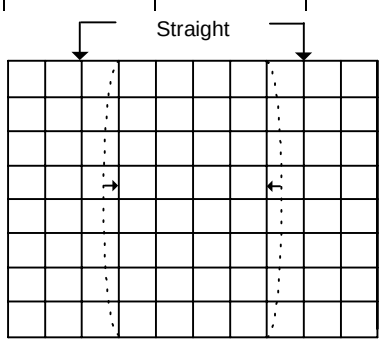
[SCREEN SIZE]

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of H. CENTER</td><td>Signal generator

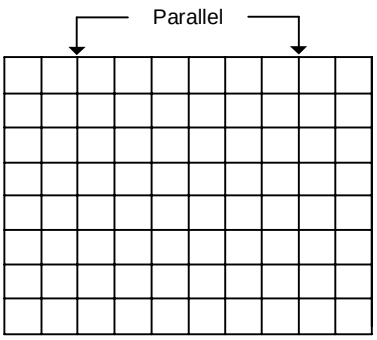
Remote control unit</td><td></td><td>3.H-CENT.</td><td>13. Receive a circle pattern signal.
14. Select 3.H-CENT and set the initial setting value.
15. Adjust H-CENT to make C=D.
16. Press the MENU/OK key and memorize the set value.</td></tr>
<tr><td>Adjustment of H.SIZE</td><td></td><td></td><td>4.H-SIZE</td><td>17. Receive a cross-hatch signal.
18. Select 4.H-SIZE and set the initial setting value.
19. Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the bellow table.
20. Press the MENU/OK key and memorize the set value.
21. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size is in the below table.
22. Press the MENU/OK key and memorize the set value.</td></tr>
<tr><td>Adjustment of EW-PIN</td><td></td><td></td><td>6.EW-PIN</td><td>23. Select 6.EW-PIN and set the initial setting value
24. Adjust EW-PIN and make the 2nd.vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight.
25. Press the MENU/OK key and memorize the set value.</td></tr>
</table>

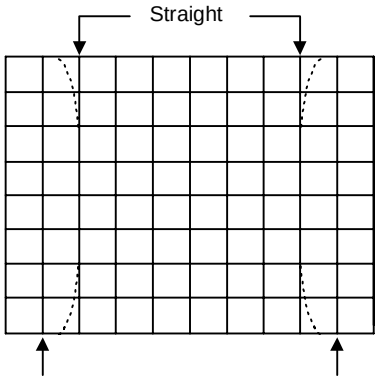


ASPECT MODE / ADJ. ITEM	ZOOM		
	REGULAR	**ZOOM**	**16 : 9**
H-SIZE	92%	——— (FIXED)	——— (FIXED)



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TRAPEZ	**Signal generator** **Remote control unit**		**5.TRAPEZ**	26. Receive a cross-hatch signal. 27. Select 5.TRAPEZ with the function UP/DOWN key. 28. Set the initial setting value of TRAPEZ with the function LEFT/RIGHT key. 29. Adjust TRAPEZ and bring the VERTICAL lines at the right and left edges of the screen parallel . 30. Press the MENU/OK key and memorize the set value.
Adjustment of CORNER UP/ LOW	**Signal generator** **Remote control unit**		**7.COR-PIN** **8.COR-UP** **9.COR-LO**	31. Select 9.COR-LO with the FUNCTION UP / DOWN key. 32. Set the initial setting value of 9.COR-LO with the function LEFT/RIGHT key. 33. Adjust COR-LO, and bring the straight line at the low corner. 34. Select 8.COR-UP with the function UP / DOWN key. 35. Set the initial setting value of 8.COR-UP with the function LEFT/RIGHT key. 36. Adjust COR-UP, and bring the straight line at the upper corner. 37. If the extreme upper & lower corners and a little pin or barrel, chose 7.COR-PIN and adjust. And adjust to get the straight. 38. Press the MENU/OK key and store the set value.
Adjustment of ANGLE	**Signal generator** **Remote control unit**		**10.ANGLE**	● In case where there is a parallelogrammical distortion of images on the screen. (Fig. A) 39. Select 10.ANGLE with the FUNCTION UP / DOWN key. 40. Adjust ANGLE, and bring the VERTICAL lines straight. 41. Press the MENU key and memorize the set value.





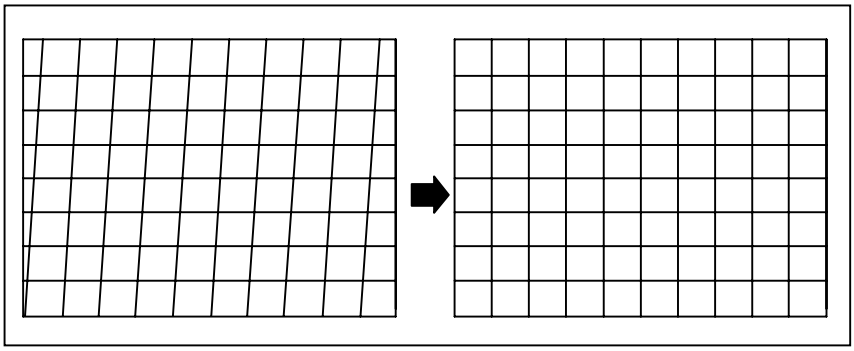


Fig. A

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of BOW	**Signal generator** **Remote control unit**		**11.BOW**	● In case where there is a bow-shaped distortion of images on the screen. (Fig.B) 42. Select 11.BOW with the function UP/DOWN key. 43. Adjust BOW, and bring the VERTICAL lines straight. 44. Press the MENU/OK key and memorize the set value.

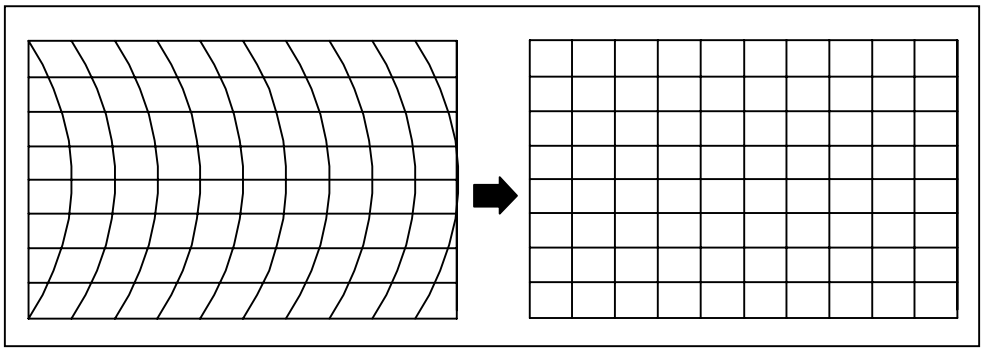
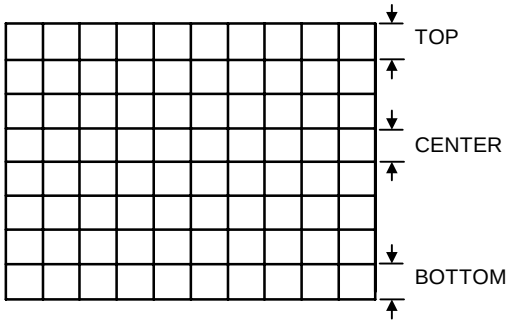


Fig. B

Adjustment of V-S.CR & V.LIN.			**12.V-S.CR** **13.V.LIN.**	● When the vertical linearity has been deteriorated remarkably, perform the following steps. 45. Receive a cross-hatch signal. 46. Select 13. V.LIN with the function UP / DOWN key. 47. Set the initial setting value of 13. V.LIN with the function LEFT/RIGHT key. 48. Select 12. V-S.CR. with the function UP / DOWN key. 49. Set the initial setting value of 12. V-S.CR. with the function LEFT/RIGHT key. 50. Adjust 13. V.LIN and 12. V-S.CR. so that the spaces of each line on TOP, CENTER, and BOTTOM become uniform. NOTE : Do not adjust “ZOOM” & “16 : 9” mode.



				∗ At first the adjustment in 50Hz REGULAR mode should be done, then the data for the other ZOOM mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 60Hz (NTSC EXT mode) REGULAR mode. If the adjustment in 50Hz REGULAR mode has been done and stored, the data for the other ZOOM modes is corrected in the same value at the same time. ∗ Only the data for the other ZOOM mode in 60Hz is corrected for it self.

AUDIO CIRCUIT ADJUSTMENT

- Do not touch **3. AUDIO** adjustment of the SERVICE MENU as it requires no adjustment.
  If values had changed for the some reason, set the initial values in the following table.

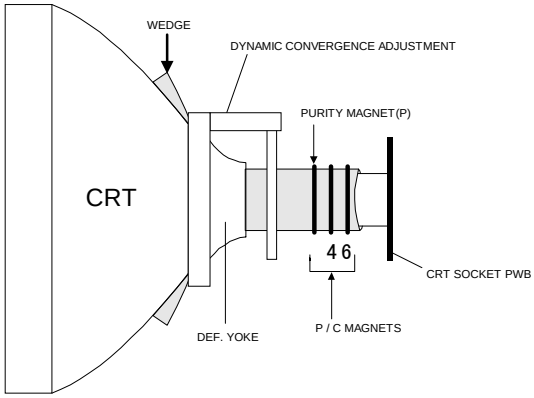
3. AUDIO(Do not adjust)

Setting item	Variable range	fixed value
1. ERR LIMIT	00H～FFH	10H
2. A2 ID THR	00H～FFH	19H
3. QUASI	00H～FFH	19H

PURITY, CONVERGENCE ADJUSTMENT

PURITY ADJUSTMENT

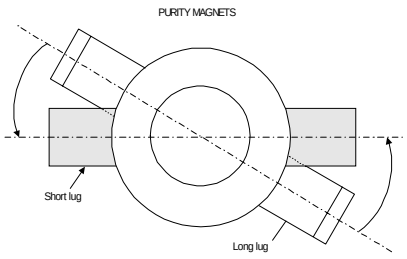
1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

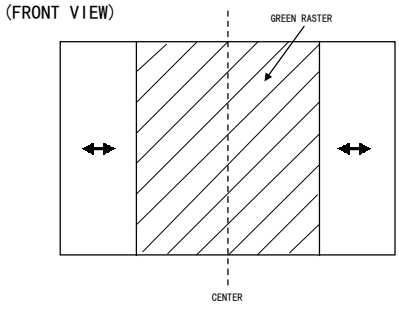


Fig.3

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.

2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).

3. Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.

4. Repeat 2 and 3 above, and make best convergence.

● After adjustment, fix the wedge at the original position.
Fasten the retainer screw of the deflection yoke.
Fix the 6 magnets with glue.

DYNAMIC (periphery) CONVERGENCE ADJUSTMENT

After adjusting purity & static convergence.

1. Move the deflection yoke up and down to adjust the pin cushion distortion in the screen top and bottom. (See Fig. 2)

2. Move the deflection yoke left to right to overlap the lines in the periphery, and match the Yv(VR1).(As shown in Fig. 4)

3. Using the VR1 on the deflection yoke, match the Y_H (CROSS). (See Fig. 3 and 6)
4. Using the VR2 on the deflection yoke, match the Y_H (BOW). (See Fig. 3 and 6)
5. Repeat the steps 1 and 4 and obtain an optimum convergence.

6. Differential(XV) coil ADJUSTMENT.
In case where the horizontal lines of red and blue around the center of both sides of the picture as shown in Fig. 5, adjust the X_V difference by using the differential coil(XV coil) on the top of the deflection yoke (Fig. 6) so as to minimize the X_V difference.

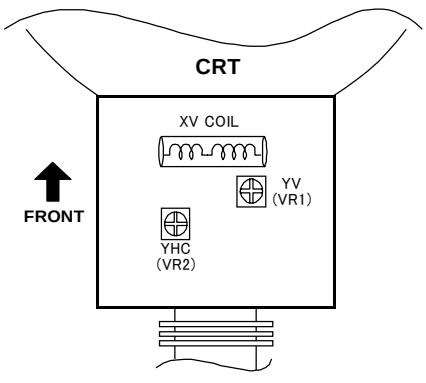


Fig.6

(FRONT VIEW)

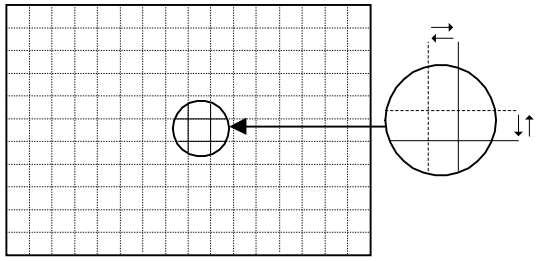


Fig. 1

(FRONT VIEW)

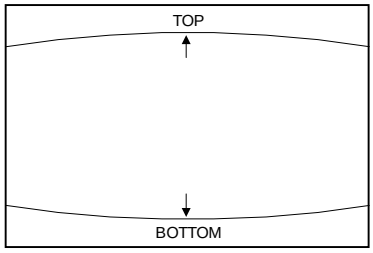


Fig. 2

(FRONT VIEW)

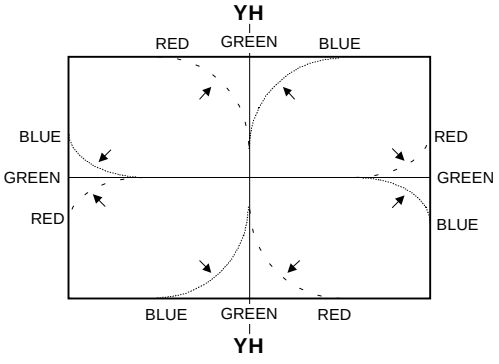


Fig. 3

(FRONT VIEW)

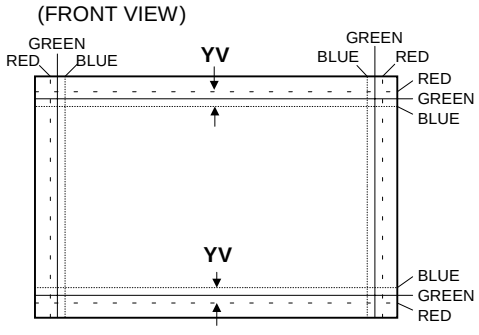


Fig. 4

(FRONT VIEW)

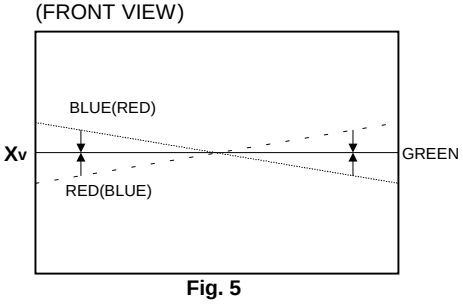


Fig. 5

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

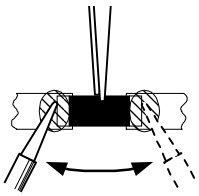
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

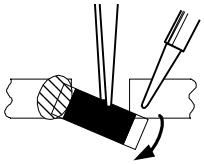
1. How to remove Chip parts

◆ **Resistors, capacitors, etc**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

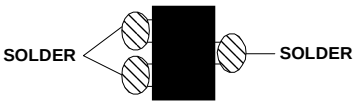


(2) Shift with tweezers and remove the chip part.

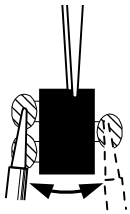


◆ **Transistors, diodes, variable resistors, etc**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

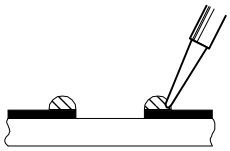


Note : After removing the part, remove remaining solder from the pattern.

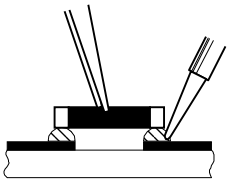
2. How to install Chip parts

◆ **Resistors, capacitors, etc**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

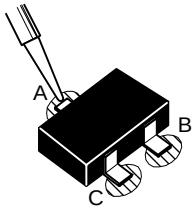


◆ **Transistors, diodes, variable resistors, etc**

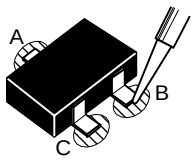
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



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PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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■ **EXPLODED VIEW** ····· **39, 40, 41**
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- POWER & DEF. PW BOARD ASS' Y ····· **44**
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- MICON PW BOARD ASS'Y [SMF0M602A-H2] ····· **48**
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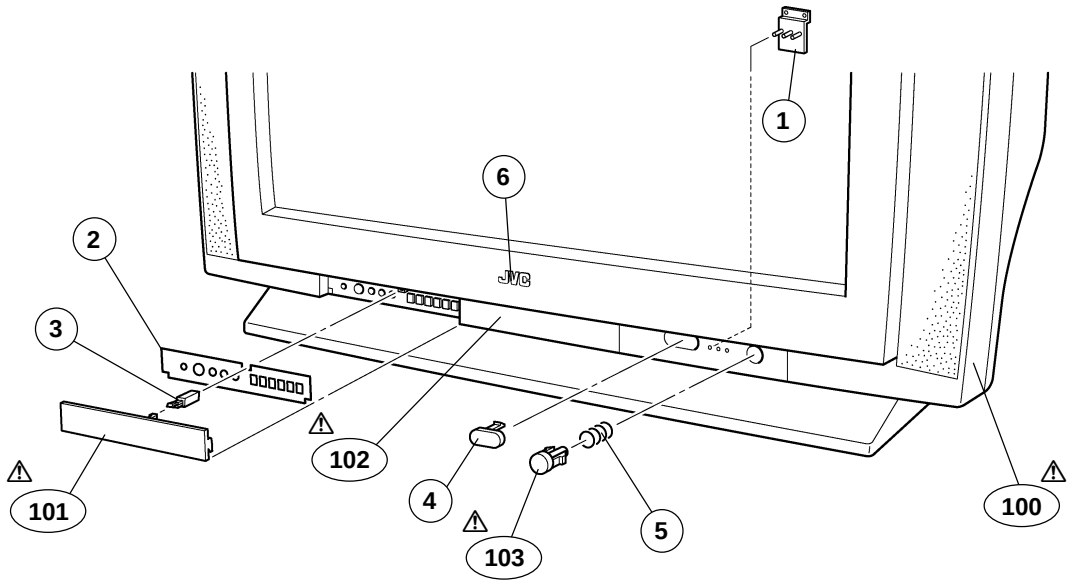
USING PW BOARD & REMOTE CONTROL UNIT

⚠	Model / PWB ASS'Y	HV-L29PRO	HV-L29PRO/HK	HV-L29PRO/I-A	HV-L29PRO/AU	HV-L29PRO/EE
	MAIN PWB	SMF-1601A-H2	←	←	←	←
	BLK PWB (Within MAIN PWB)	SMF0V502A-H2	←	←	←	←
	POWER&DEF PWB	SMF-2501A-H2	←	←	←	←
	CRT SOCKET PWB	SMF-3502A-H2	←	←	←	←
	FRONT CONTROL PWB	SMF-8501A-H2	←	←	←	←
	MICON PWB	SMF0M601A-H2	SMF0M602A-H2	SMF0M603A-H2	SMF0M601A-H2	SMF0M604A-H2
	AV SW PWB	SMF0S501A-H2	←	←	←	←
	SYNC SEP PWB	SMF0V501A-H2	←	←	←	←
	100Hz PWB	SMF0Z501A-H2	←	←	←	←
	REMOTE CONTROL UNIT	RM-C214-1C	RM-C215-1C	RM-C214-1C	←	←

EXPLODED VIEW PARTS LIST (Ⅰ)

⚠ Ref.No.	Part No.	Part Name	Description
1	LC31476-002B-H	L.E.D.LENS	
2	LC20778-003A-H	OPERATION SHEET	
3	CM48229-00A-C	DOOR LATCH	
4	LC31474-001A-H	WINDOW	
5	CM35235-003-H	SPRING	
6	LC41037-001A	JVC MARK	
⚠ 100	LC11193-008B-H	FRONT CABI.ASSY	Inc.No.101～103
⚠ 101	LC20776-008A-H	DOOR	
⚠ 102	LC20777-001D-H	CENTER PLATE	
⚠ 103	LC31475-001A-H	POWER KNOB	

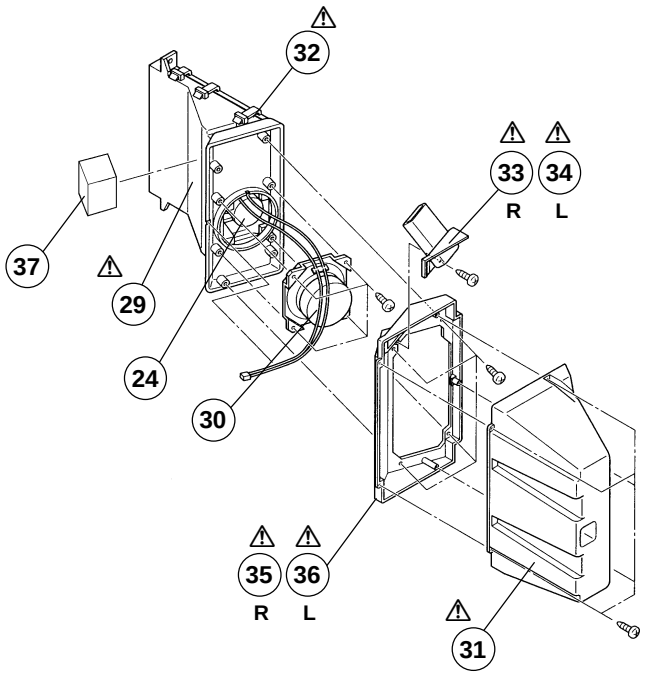
EXPLODED VIEW (Ⅰ)



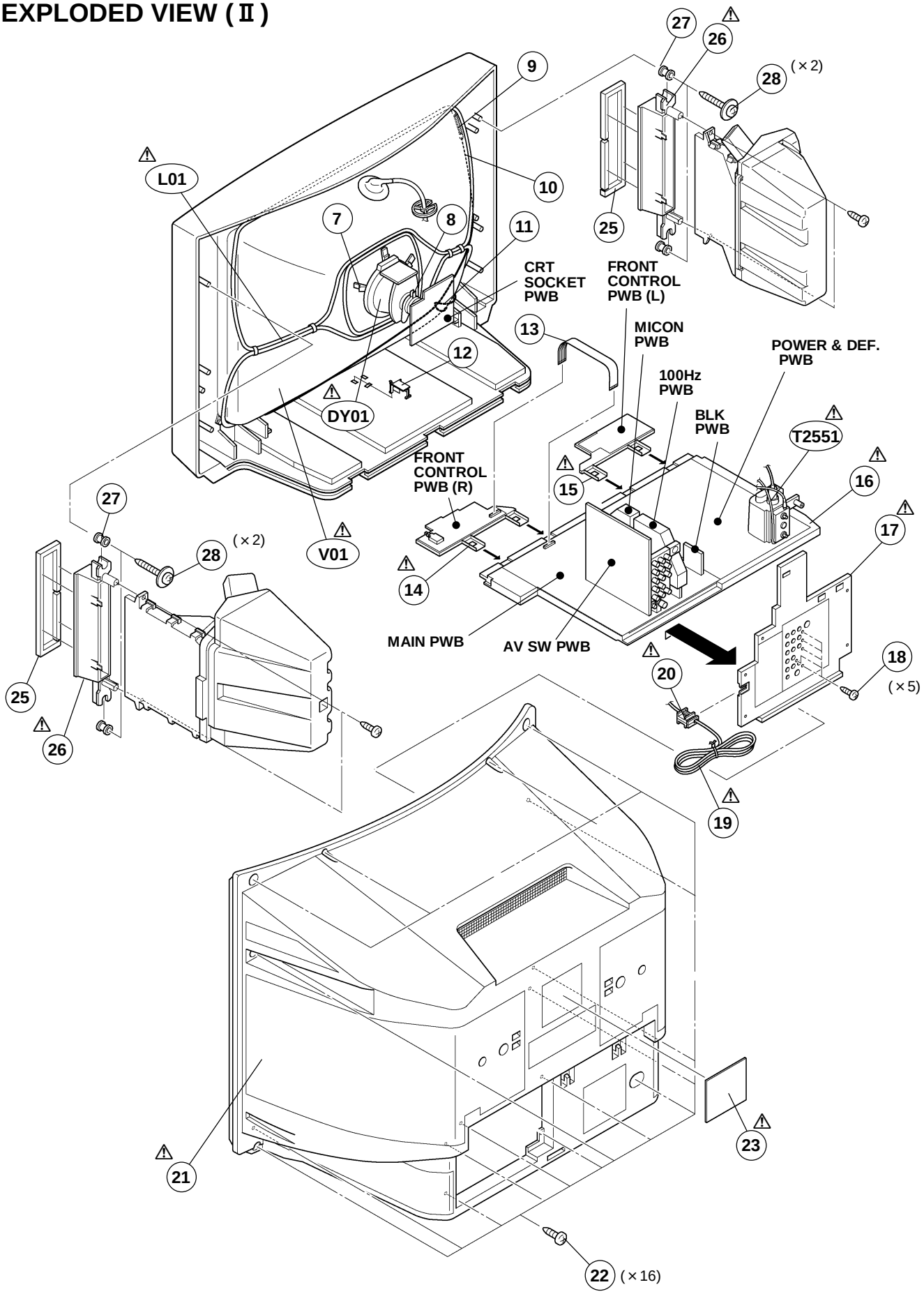
EXPLODED VIEW PARTS LIST (Ⅱ)

⚠	Ref.No.	Part No.	Part Name	Description
⚠	V01	A68QCU259X	PICTURE TUBE(C)	
⚠	L01	QQW0099-001	DEG.COIL	
⚠	DY01	QQD0056-001	DEF YOKE	
⚠	T2551	QQH0098-001	FB TRANSF.	With POWER&DEF.PWB
	7	CE40764-00A	WEDGE ASSY	(×4)
	8	CE42730-00A	PC MAGNET	
	9	A48457-3-H	SPRING	
	10	CHGB0020-0B-FH	BRAIDED WIRE	
	11	CHGB0017-0C	BRAIDED ASSY(SUB)	
	12	LC30103-001B-H	CHASSIS ADAPTER	
	13	CHFD125-08BD-N	FFC WIRE	
⚠	14	LC11065-001A-H	CONTROL BASE(R)	
⚠	15	LC11065-002A-H	CONTROL BASE(L)	
⚠	16	LC10764-001A-H	CHASSIS BASE	
⚠	17	LC10766-002A-H	TERMINAL BOARD	
	18	QYSBSF3012M	TAPPING SCREW	(×5)
⚠	19	QMP40D0-200J5	POWER CORD	
⚠	20	CM23167-A01-H	CORD CLAMP	
⚠	21	LC10763-007A-HH	REAR COVER	[HV-L29PRO]
⚠	21	LC10763-007A-HH	REAR COVER	[HV-L29PRO-A]
⚠	21	LC10763-007A-HH	REAR COVER	[HV-L29PRO/AU]
⚠	21	LC10763-007A-HH	REAR COVER	[HV-L29PRO/EE]
⚠	21	LC10763-007A-HH	REAR COVER	[HV-L29PRO/HK]
	22	QYSBSFG4016Z	TAPPING SCREW	(×16)
⚠	23	LC20377-001B-H	RATING LABEL	[HV-L29PRO]
⚠	23	LC20413-002B-H	RATING LABEL	[HV-L29PRO-A]
⚠	23	LC20377-013B-H	RATING LABEL	[HV-L29PRO/AU]
⚠	23	LC20377-009B-H	RATING LABEL	[HV-L29PRO/EE]
⚠	23	LC20377-012B-H	RATING LABEL	[HV-L29PRO/HK]
	24	CEBSS03K-01KJ2	SPEAKER(Tweeter)	(×2)SP03,SP04
	25	CM34837-007-H	STICK SHEET	(×2)
	26	LC10767-001A-H	DOME ADAPTOR	(×2)
	27	LC40226-003A-H	SPACER	(×4)
	28	LC40317-002A-H	TAPPING SCREW	(×4)
⚠	29	LC10050-001A-H	HORN	(×2)
	30	QAS0094-001	SPEAKER	(×2)SP01,SP02
⚠	31	CM12946-B01-H	DOME BOX	(×2)
⚠	32	LC10051-001A-H	DOME COVER	(×2)
⚠	33	CM23139-A01-H	REFLECTOR(R)	
⚠	34	CM23139-B02-H	REFLECTOR(L)	
⚠	35	CM12945-B01-H	DOME RING(R)	
⚠	36	CM12945-B02-H	DOME RING(L)	
	37	CM47846-005-H	DOME ABSORBER	(×2)
	--	CHGY0031-0C	ANT CABLE ASSY	

EXPLODED VIEW (Ⅱ)



EXPLODED VIEW (Ⅱ)



PRINTED WIRING BOARD PARTS LIST

■MAIN P.W. BOARD ASS'Y (SMF-1601A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R1004-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R1006	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1008	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1101	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1102	NRSA63J-181X	MG R	180Ω 1/16W J
	R1103	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R1104	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1105	NRSA63J-331X	MG R	330Ω 1/16W J
	R1106	NRSA63J-270X	MG R	27Ω 1/16W J
	R1107	NRSA63J-271X	MG R	270Ω 1/16W J
	R1108	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1109-11	NRSA63J-101X	MG R	100Ω 1/16W J
	R1151	NRSA63J-101X	MG R	100Ω 1/16W J
	R1153	NRSA63J-101X	MG R	100Ω 1/16W J
	R1155	NRSA63J-101X	MG R	100Ω 1/16W J
	R1157	NRSA63J-101X	MG R	100Ω 1/16W J
	R1159	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1161	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1301-02	NRSA63J-101X	MG R	100Ω 1/16W J
	R1303	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1304	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1311	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1312	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1313	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1314	NRSA63J-221X	MG R	220Ω 1/16W J
	R1315-17	NRSA63J-101X	MG R	100Ω 1/16W J
	R1318	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1319	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1321-22	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1323-24	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1325	NRSA63J-101X	MG R	100Ω 1/16W J
	R1326	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1401-02	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1403-04	NRSA63J-331X	MG R	330Ω 1/16W J
	R1405-06	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1451	NRSA63J-821X	MG R	820Ω 1/16W J
	R1454	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1455-56	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1457	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R1458	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1459	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1461	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1462	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1463	NRSA63J-124X	MG R	120kΩ 1/16W J
	R1465-66	NRSA63J-224X	MG R	220kΩ 1/16W J
	R1467	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1468	NRSA63J-224X	MG R	220kΩ 1/16W J
	R1469	NRSA63J-683X	MG R	68kΩ 1/16W J
	R1470	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1471	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1472	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1473	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1474	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1475	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1476-78	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1479	NRSA63J-154X	MG R	150kΩ 1/16W J
	R1480	NRSA63J-823X	MG R	82kΩ 1/16W J
	R1481	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1482	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R1483	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1484	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1485	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1486	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1487	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1489	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1491	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1492	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1501	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1504	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1511	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R1512	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1521	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1522	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1551	NRSA63J-100X	MG R	10Ω 1/16W J
	R1552	NRSA63J-124X	MG R	120kΩ 1/16W J
	R1553	NRSA63J-683X	MG R	68kΩ 1/16W J
	R1554	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1555	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1556	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1557	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1558	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1559	NRSA63J-154X	MG R	150kΩ 1/16W J
	R1560	NRSA63J-100X	MG R	10Ω 1/16W J
	R1561	QRN143J-0R0X	C R	0.0Ω 1/4W J
	R1562	NRSA63J-683X	MG R	68kΩ 1/16W J
	R1563	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1564	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1565	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1591	NRSA63J-561X	MG R	560Ω 1/16W J
	R1592	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1600	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1605	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1606	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1611-12	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1613	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1614-15	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1616-17	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1621	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1622	NRSA63J-561X	MG R	560Ω 1/16W J
	R1623-24	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1625	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1626	QRK126J-103X	C R	10kΩ 1/2W J
	R1627	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1628	NRSA63J-561X	MG R	560Ω 1/16W J
	R1629-30	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1631	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1632-33	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1634	NRSA63J-334X	MG R	330kΩ 1/16W J
	R1635	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1640-41	NRSA63J-681X	MG R	680Ω 1/16W J
	R1647	NRSA63J-334X	MG R	330kΩ 1/16W J
	R1652	QRK126J-2R2X	C R	2.2Ω 1/2W J
	R1653	QRK126J-2R2X	C R	2.2Ω 1/2W J
	R1661	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1662-63	NRSA63J-394X	MG R	390kΩ 1/16W J
	R1666-69	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1672	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1673	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1675	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1677-78	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1679	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1680	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1681	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1701-02	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1703-04	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1705-08	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1711-12	NRSA63J-101X	MG R	100Ω 1/16W J
	R1714-15	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1716-17	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1721-23	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1772-76	NRSA63J-221X	MG R	220Ω 1/16W J
	R1951	QRK126J-560X	C R	56Ω 1/2W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C1001	NCB31HK-222X	CHIP CAP.	2200pF 50V K
	C1002	QETN1HM-106Z	E CAP.	10μF 50V M

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1004	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1005	QETN1CM-108Z	E CAP.	1000µF 16V M
	C1006	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1007	QETN1HM-106Z	E CAP.	10µF 50V M
	C1008	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1009	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1010	QETN1HM-106Z	E CAP.	10µF 50V M
	C1011	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1101	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1102	QETN1HM-106Z	E CAP.	10µF 50V M
	C1103	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1104	QETN1CM-107Z	E CAP.	100µF 16V M
	C1105	QETN1HM-106Z	E CAP.	10µF 50V M
	C1106-07	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1111	NDC31HJ-820X	C CAP.	82pF 50V J
	C1112-13	NDC31HJ-470X	C CAP.	47pF 50V J
	C1114	NDC31HJ-180X	C CAP.	18pF 50V J
	C1115-16	NCB31HK-472X	C CAP.	4700pF 50V K
	C1117-18	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1119-20	NDC31HJ-2R0X	C CAP.	2.0pF 50V J
	C1121	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1122-23	NDC31HJ-102X	C CAP.	1000pF 50V J
	C1124-25	QETN1HM-106Z	E CAP.	10µF 50V M
	C1126	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1127	QETN1HM-106Z	E CAP.	10µF 50V M
	C1128	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1129	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1130	QETN1HM-106Z	E CAP.	10µF 50V M
	C1151-54	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1155-56	NDC31HJ-102X	C CAP.	1000pF 50V J
	C1301	QETN1CM-107Z	E CAP.	100µF 16V M
	C1302-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1305-09	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1310	QETN1AM-228Z	E CAP.	2200µF 10V M
	C1311	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C1312	NDC31HJ-221X	C CAP.	220pF 50V J
	C1313-15	NCB31HK-223X	CHIP CAP.	0.022µF 50V K
	C1316-18	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1320	QETN0JM-228Z	E CAP.	2200µF 6.3V M
	C1321-23	NCB31HK-223X	CHIP CAP.	0.022µF 50V K
	C1324	NDC31HJ-820X	C CAP.	82pF 50V J
	C1351	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C1401	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1402	QETN1CM-107Z	E CAP.	100µF 16V M
	C1403-04	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1453	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1454	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1455-56	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1457	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1471	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1472	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1473	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1474	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1475	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1491	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C1501-02	NDC31HJ-150X	C CAP.	15pF 50V J
	C1521	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1551-52	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C1553	QETN1EM-476Z	E CAP.	47µF 25V M
	C1554-55	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C1560	QETN1CM-107Z	E CAP.	100µF 16V M
	C1561	NDC31HJ-561X	C CAP.	560pF 50V J
	C1562	QETN1HM-105Z	E CAP.	1µF 50V M
	C1564	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1591	NDC31HJ-471X	C CAP.	470pF 50V J
	C1606-07	QETN1CM-227Z	E CAP.	220µF 16V M
	C1608-09	QETM1EM-228	E CAP.	2200µF 25V M
	C1613	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1614	QETN1CM-476Z	E CAP.	47µF 16V M
	C1615	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1619	QETN1HM-476Z	E CAP.	47µF 50V M
	C1620	QETN1HM-105Z	E CAP.	1µF 50V M

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1621	QETN1CM-107Z	E CAP.	100µF 16V M
	C1623	QETN1HM-476Z	E CAP.	47µF 50V M
	C1624	QETN1CM-107Z	E CAP.	100µF 16V M
	C1625	QETN1HM-105Z	E CAP.	1µF 50V M
	C1626	QETN1CM-476Z	E CAP.	47µF 16V M
	C1636-37	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1638-39	QETN1HM-105Z	E CAP.	1µF 50V M
	C1643	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1651-54	QFV71HJ-684Z	MF CAP.	0.68µF 50V J
	C1660-63	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1664-65	NCB31HK-222X	CHIP CAP.	2200pF 50V K
	C1666-67	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1671	QETN1CM-227Z	E CAP.	220µF 16V M
	C1672	QETN1HM-226Z	E CAP.	22µF 50V M
	C1673-74	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1678-79	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1680	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1681	NCB31HK-332X	CHIP CAP.	3300pF 50V K
	C1682	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1683	QETN1EM-476Z	E CAP.	47µF 25V M
	C1684	NCB31HK-332X	CHIP CAP.	3300pF 50V K
	C1685	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1686	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1687	QETN1HM-106Z	E CAP.	10µF 50V M
	C1688	QETN1EM-476Z	E CAP.	47µF 25V M
	C1689-90	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1698	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1699	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1701	QETN1HM-106Z	E CAP.	10µF 50V M
	C1702	NCB31CK-563X	CHIP CAP.	0.056µF 16V K
	C1951	QETN1CM-477Z	E CAP.	470µF 16V M
	C1952-53	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1954	QETN1AM-477Z	E CAP.	470µF 10V M
	C1955	QETN1AM-227Z	E CAP.	220µF 10V M
	C1956	QETN1AM-107Z	E CAP.	100µF 10V M
	COIL			
	L1001	QQL244K-270Z	PEAKING COIL	
	L1002-03	QQL244K-100Z	COIL	10µH K
	L1004	NQL092K-100X	INDUCTOR	
	L1101	QRN143J-0R0X	C R	0.0Ω 1/4W J
	L1102	QQL244K-4R7Z	COIL	4.7µH K
	L1111	QQL244K-220Z	PEAKING COIL	
	L1112	QQL244K-180Z	COIL	18µH K
	L1301-02	NQL092K-1R5X	INDUCTOR	
	L1951	QQL26AM-5R6Z	CHOKE COIL	
	DIODE			
	D1311-13	MA3051/M/-X	ZENER DIODE	
	D1314-18	MA111-X	SI.DIODE	
	D1471-74	MA111-X	SI.DIODE	
	D1521	MA111-X	SI.DIODE	
	D1591	MA111-X	SI.DIODE	
	D1592	MA3051/M/-X	ZENER DIODE	
	D1602-03	MA111-X	SI.DIODE	
	D1608	MA111-X	SI.DIODE	
	D1611	MA111-X	SI.DIODE	
	D1615	MA111-X	SI.DIODE	
	D1618	MA3051/M/-X	ZENER DIODE	
	D1622-25	MA3270/H/-X	ZENER DIODE	
	D1626-27	MA3150/M/-X	ZENER DIODE	
	D1771-74	MA3056/M/-X	ZENER DIODE	
	D1951	1SR35-400A-T5	SI.DIODE	
	D1981-82	MA111-X	SI.DIODE	
	TRANSISTOR			
	Q1101-02	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1301	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1471-72	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1561	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1562	2SA1037AK/QR/-X	SI.TRANSISTOR	

⚠	Symbol No.	Part No.	Part Name	Description
	TRANSISTOR			
	Q1601	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1608	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1609	DTC124EKA-X	DIGI.TRANSISTOR	
	Q1610	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1613-14	DTC323TK-X	DIGI.TRANSISTOR	
	IC			
	IC1101	MSP3415DQGB3GHX	I.C.(MONO-ANA)	
	IC1301	SDA9380	I.C.(M)	
	IC1402	BA10324AF-XE	I.C.(MONO-ANA)	
	IC1471	UPC358G2-XE	I.C.(MONO-ANA)	
	IC1551	LA6515	I.C.(MONO-ANA)	
	IC1602-03	TDA2052V	I.C.(MONO-ANA)	
	IC1604	BA4558F-X	I.C.(MONO-ANA)	
	IC1661	BD3869F-X	I.C.(MONO-ANA)	
	IC1663	NJM2150AM-X	I.C.(MONO-ANA)	
	IC1701	JLC1562BF-X	I.C.(DIGI-MOS)	
	IC1951	BA09T	I.C.(MONO-ANA)	
	IC1952	BA08T	I.C.(MONO-ANA)	
	OTHERS			
	CN1011	QGA2501C5-04Z	W TO B CONNE	
	CN1013	QGA2501C1-10	W TO B CONNE	
	CN1015	QGB2501J1-10	RECEPTACLE	
	K1001	NQR0389-003X	FERRITE BEADS	
	K1101-02	NQR0389-003X	FERRITE BEADS	
	K1301	NQR0413-003X	BEADS CORE	
	LC1102	NQR0431-001X	EMI FILTER	
	LC1301-03	NQR0431-001X	EMI FILTER	
	TU1001	QAU0245-001	TUNER	
	X1101	CE42546-001Z	CRYSTAL	
	X1501	QAX0549-001Z	CRYSTAL	
	Y1682-83	NRSA63J-105X	MG R 1MΩ 1/16W J	
	MD1001	----------	BLK PB ASSY	(SMF0V502A-H2)As follow

■BLK P.W. BOARD ASS'Y (SMF0V502A-H2)

This P.W. Board Ass'y is included in the above main P.W. Board Ass'y.

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0001-02	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003	NRSA63J-292X	MG R	3.9kΩ 1/16W J
	R0004	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0005-06	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1004-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R0007-09	NRSA63J-102X	MG R	1.0kΩ 1/16W J
	CAPACITOR			
	C0001	QETN1CM-107Z	E CAP.	100μF 16V M
	C0002	NCB31HK-103X	CHIP CAP.	0.01μF 50V K
	C0003	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	TRANSISTOR			
	Q0001	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0002-04	2SC2412K/QR/-X	SI.TRANSISTOR	
	IC			
	IC001	UPC358G2-XE	I.C.	

■ POWER & DEF. P.W. BOARD ASS'Y (SMF-2502A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R2401-02	QRE141J-562Y	C R	5.6kΩ 1/4W J
	R2403	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2404	QRT01EJ-1R0X	MF R	1.0Ω 1W J
	R2405	QRL02EJ-271X	OM R	270Ω 2W J
	R2406	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2407-08	QRX01GJ-1R5	MF R	1.5Ω 1W J
	R2409	QRE141J-823Y	C R	82kΩ 1/4W J
	R2410	QRE141J-103Y	C R	10kΩ 1/4W J
	R2421	QRE141J-103Y	C R	10kΩ 1/4W J
	R2422	QRE141J-684Y	C R	680kΩ 1/4W J
	R2461	QRG029J-820	OM R	82 Ω 2W J
	R2463	QRE141J-682Y	C R	6.8kΩ 1/4W J
	R2464	QRT01EJ-3R3X	MF R	3.3Ω 1W J
	R2468	QRE141J-102Y	C R	1kΩ 1/4W J
	R2469	QRE141J-272Y	C R	2.7kΩ 1/4W J
	R2471	QRE141J-391Y	C R	390Ω 1/4W J
	R2472	QRA14CF-1002Y	MF R	10kΩ 1/4W F
	R2473	QRE141J-473Y	C R	47kΩ 1/4W J
	R2474	QRE141J-103Y	C R	10kΩ 1/4W J
	R2475	QRE141J-102Y	C R	1kΩ 1/4W J
	R2476	QRE141J-102Y	C R	1kΩ 1/4W J
	R2477	QRE141J-563Y	C R	56kΩ 1/4W J
	R2478	QRE141J-333Y	C R	33kΩ 1/4W J
	R2501	QRE141J-471Y	C R	470Ω 1/4W J
	R2502	QRE141J-123Y	C R	12kΩ 1/4W J
	R2503	QRE121J-152Y	C R	1.5kΩ 1/2W J
	R2504	QRL03EJ-272X	OM R	2.7kΩ 3W J
	R2505	QRL03EJ-332X	OM R	3.3kΩ 3W J
	R2506	QRE121J-5R6Y	C R	5.6Ω 1/2W J
	R2521	QRE121J-471Y	C R	470Ω 1/2W J
	R2522	QRE141J-223Y	C R	22kΩ 1/4W J
	R2523	QRE141J-103Y	C R	10kΩ 1/4W J
	R2524	QRC121K-152Z	COMP.R	1.5kΩ 1/2W K
	R2541	QRE141J-182Y	C R	1.8kΩ 1/4W J
	R2542	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2543	QRE121J-272Y	C R	2.7kΩ 1/2W J
⚠	R2551	QRZ9022-R47	F R	0.47 Ω 1W K
⚠	R2552	QRZ9022-R47	F R	0.47 Ω 1W K
⚠	R2555	QRZ9022-R82	F R	0.82 Ω 1W K
	R2561	QRL01EJ-220X	OM R	22Ω 1W J
	R2562	QRE121J-123Y	C R	12kΩ 1/2W J
	R2563	QRZ0056-103Z	COMP R	10kΩ 1/2W K
	R2564-68	QRE121J-184Y	C R	180kΩ 1/2W J
	R2569	QRE141J-183Y	C R	18kΩ 1/4W J
	R2570	QRE141J-103Y	C R	10kΩ 1/4W J
	R2571	QRE141J-822Y	C R	8.2kΩ 1/4W J
	R2572-73	QRE141J-183Y	C R	18kΩ 1/4W J
	R2574	QRE141J-392Y	C R	3.9kΩ 1/4W J
	R2575	QRE141J-152Y	C R	1.5kΩ 1/4W J
	R2581	QRF154K-4R7	UNF R	4.7Ω 15W K
	R2582	QRE141J-681Y	C R	680Ω 1/4W J
	R2583	QRE121J-682Y	C R	6.8kΩ 1/2W J
	R2584	QRE141J-183Y	C R	18kΩ 1/4W J
	R2585	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2901	QRZ0123-121	UNF R	120 Ω 7W J
	R2902	QRF054K-3R3	UNF R	3.3Ω 5W K
	R2903	QRF154K-1R8	UNF R	1.8Ω 15W K
	R2904	QRL039J-683	OM R	68kΩ 3W J
	R2905-06	QRE121J-394Y	C R	390kΩ 1/2W J
	R2907	QRE141J-273Y	C R	27kΩ 1/4W J
	R2908-09	QRL039J-823	OM R	82kΩ 3W J
⚠	R2910	QRZ9017-4R7	F R	4.7 Ω 1/4W J
	R2911	QRE121J-122Y	C R	1.2kΩ 1/2W J
	R2912	QRE141J-152Y	C R	1.5kΩ 1/4W J
	R2913	QRT02EJ-R27X	MF R	0.27Ω 2W J
	R2914	QRM059J-R10	MP R	0.10Ω 5W J
	R2915	QRE121J-681Y	C R	680Ω 1/2W J
	R2916	QRE121J-332Y	C R	3.3kΩ 1/2W J
⚠	R2932	QRZ9017-470	F R	47 Ω 1/4W J
	R2933	QRE121J-272Y	C R	2.7kΩ 1/2W J

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R2934	QRE121J-564Y	C R	560kΩ 1/2W J
	R2935	QRE141J-472Y	C R	4.7kΩ 1/4W J
	R2936	QRX01GJ-3R9	MF R	3.9Ω 1W J
	R2937	QRE121J-681Y	C R	680Ω 1/2W J
	R2941	QRE121J-331Y	C R	330Ω 1/2W J
	R2942	QRE121J-471Y	C R	470Ω 1/2W J
	R2943	QRE141J-103Y	C R	10kΩ 1/4W J
	R2944	QRE141J-103Y	C R	10kΩ 1/4W J
	R2945	QRE141J-563Y	C R	56kΩ 1/4W J
	R2946	QRE141J-103Y	C R	10kΩ 1/4W J
	R2949	QRE141J-101Y	C R	100Ω 1/4W J
	R2950	QRE141J-103Y	C R	10kΩ 1/4W J
	R2951	QRE121J-102Y	C R	1kΩ 1/2W J
	R2952	QRL03EJ-223X	OM R	22kΩ 3W J
	R2953	QRE141J-474Y	C R	470kΩ 1/4W J
	R2954	QRE141J-103Y	C R	10kΩ 1/4W J
	R2960	QRE141J-103Y	C R	10kΩ 1/4W J
	R2981	QRE141J-153Y	C R	15kΩ 1/4W J
	R2982	QRE141J-102Y	C R	1kΩ 1/4W J
⚠	R2991	QRZ0057-825	C R	8.2MΩ 1W J
	CAPACITOR			
	C2403	QFLC2AJ-104Z	M CAP.	0.1µF 100V J
	C2404	QCZ0120-104Z	C CAP.	0.1µF 25V Z
	C2405	QDC31HJ-820Z	C CAP.	82pF 50V J
	C2406	QETM1VM-108	E CAP.	1000µF 35V M
	C2408	QETN1VM-107Z	E CAP.	100µF 35V M
	C2409-10	QFV71HJ-474Z	MF CAP.	0.47µF 50V J
	C2411	QFLC2AJ-104Z	M CAP.	0.1µF 100V J
	C2414	QCB31HK-682Z	C CAP.	6800pF 50V K
	C2415	QETN1VM-107Z	E CAP.	100µF 35V M
	C2421	QETN1HM-105Z	E CAP.	1µF 50V M
	C2461	QEZ0414-226	E CAP.	22µF 50V M
	C2462	QFN32DJ-152Z	M CAP.	1500pF 200V J
	C2463	QFM72DJ-122Z	M CAP.	1200pF 200V J
	C2464	QCZ0120-104Z	C CAP.	0.1µF 25V Z
	C2465	QETN1HM-106Z	E CAP.	10µF 50V M
	C2466	QFP31HJ-272Z	PP CAP.	2700pF 50V J
	C2467	QFLC1HJ-102Z	M CAP.	1000pF 50V J
	C2468	QETN1EM-476Z	E CAP.	47µF 25V M
	C2470	QCS31HJ-470Z	C CAP.	47pF 50V J
	C2471	QFLC1HJ-103Z	M CAP.	0.01µF 50V J
	C2501	QCB32HK-331Z	C CAP.	330pF 500V K
	C2502	QFN32DK-103	M CAP.	0.01µF 200V K
	C2503	QFV71HJ-224Z	MF CAP.	0.22µF 50V J
⚠	C2520	QFZ0200-112	MPP CAP.	1100pF1.5kVH±3%
⚠	C2521	QFZ0200-112	MPP CAP.	1100pF1.5kVH±3%
⚠	C2522	QFZ0200-133	MPP CAP.	0.013µF1.5kVH±3%
	C2523	QFN32DK-183	M CAP.	0.018µF 200V K
⚠	C2524	QFP32JJ-223	PP CAP.	0.022µF 630V J
	C2526	QFZ0197-104	MPP CAP.	0.53µF 250V J
	C2527	QFZ0197-154	MPP CAP.	0.15µF 250V J
	C2528	QFZ0197-104	MPP CAP.	0.53µF 250V J
	C2529	QFZ0197-154	MPP CAP.	0.15µF 250V J
	C2530	QCB32HK-561Z	C CAP.	560pF 500V K
	C2531	QFZ0197-534	MPP CAP.	0.53µF 250V J
	C2532	QETM2CM-227	E CAP.	220µF 160V M
	C2541	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C2551	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2552	QETN1EM-108Z	E CAP.	1000µF 25V M
	C2553	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2554	QETN1CM-108Z	E CAP.	1000µF 16V M
	C2555	QCB32HK-102Z	C CAP.	1000pF 500V K
	C2556	QETM2EM-106	E CAP.	10µF 250V M
	C2558	QETN1CM-477Z	E CAP.	470µF 16V M
	C2559	QEHR1CM-227Z	E CAP.	220µF 16V M
	C2561	QFLC2AJ-153Z	M CAP.	0.015µF 100V J
⚠	C2563	QFZ0122-682	MPP CAP.	6800pF1.8kVH±3%
	C2564-65	QCZ0122-471	C CAP.	470pF 2kV K
⚠	C2566	QFZ0200-512	MPP CAP.	5100pF1.5kVH±3%

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C2567	QFLC1HJ-563Z	M CAP.	0.056µF 50V J
	C2568	QETN1VM-476Z	E CAP.	47µF 35V M
	C2581	QETN1CM-107Z	E CAP.	100µF 16V M
	C2582	QETN1EM-476Z	E CAP.	47µF 25V M
⚠	C2902	QFZ9075-104	MPP CAP.	0.1µFAC275V M
⚠	C2903	QFZ9075-473	MPP CAP.	0.047µFAC275V M
⚠	C2904	QCZ9054-472	C CAP.	4700pFAC250V Z
⚠	C2905	QCZ9054-472	C CAP.	4700pFAC250V Z
⚠	C2906	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2907	QEZ0371-397	E CAP.	390µF 400V M
	C2908	QCB32HK-103	C CAP.	0.01µF 500V K
	C2909	QCZ0340-391	C CAP.	390pF 2kV K
	C2910	QETN1HM-476Z	E CAP.	47µF 50V M
	C2911	QCB31HK-272Z	C CAP.	2700pF 50V K
	C2912	QCZ0340-561	C CAP.	560pF 2kV K
	C2914	QCB31HK-471Z	C CAP.	470pF 50V K
	C2915	QFLC1HJ-332Z	M CAP.	3300pF 50V J
	C2916	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2931	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2932	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2933	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2934	QETM2GM-226	E CAP.	22µF 400V M
	C2936	QCZ0340-151	C CAP.	150pF 2kV K
	C2937	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C2938	QCB31HK-222Z	C CAP.	2200pF 50V K
	C2939	QFLC1HJ-103Z	M CAP.	0.01µF 50V J
	C2940	QCB31HK-471Z	C CAP.	470pF 50V K
	C2941	QETN1AM-108Z	E CAP.	1000µF 10V M
	C2942	QFLC1HJ-102Z	M CAP.	1000pF 50V J
	C2951	QEZ0203-227	E CAP.	220µF 160V M
	C2952	QTMM1EM-228	E CAP.	2200µF 25V M
	C2955-56	QETM1EM-338	E CAP.	3300µF 25V M
	C2959	QFV71HJ-684Z	MF CAP.	0.68µF 50V J
	C2960	QCZ0131-821	C CAP.	820pF 2kV K
	C2972	QETN1CM-108Z	E CAP.	1000µF 16V M
	C2974-75	QEZ0256-128	E CAP.	1200µF 10V M
	C2976	QETN1CM-108Z	E CAP.	1000µF 16V M
	C2978-79	QEZ0256-128	E CAP.	1200µF 10V M
⚠	C2991	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C2992	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C2993	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C2995	QCZ9079-102	C CAP.	1000pFAC250V M
	TRANSFORMER			
	T2501	QQR1111-001	DRIVE TRANSF.	
⚠	T2551	QQH0098-001	FB TRANSF.	
	T2561	QQR1096-001	DEF.TRANSF.	
⚠	T2901	QQS0113-001	SWITCH.TRANSF.	
⚠	T2931	QQS0101-001	SWITCH.TRANSF.	
	COIL			
	L2461	QQR1195-001	CHOKE COIL	
	L2462	QQLZ028-272	CHOKE COIL	
	L2521	QQLZ031-180	CHOKE COIL	
	L2522	QQR1196-001	LINEARITY COIL	
	L2552	QQL26AK-220Z	COIL	22µH K
	L2561	QQLZ028-272	CHOKE COIL	
	L2901-02	QQL401K-100Z	CHOKE COIL	
	L2951	QQLZ026-460	HEATER CHOKE	
	L2954-55	QQR1129-001	CHOKE COIL	
	L2957	QQLZ026-460	HEATER CHOKE	
	L2958	QQLZ026-460	HEATER CHOKE	
	L2959-60	QQL26AK-220Z	COIL	22µH K
	DIODE			
	D2402-03	1SR35-400A-T2	SI.DIODE	
	D2421	1SS133-T2	SI.DIODE	
	D2461	EU2-T3	SI.DIODE	
	D2462	1SS133-T2	SI.DIODE	
	D2463	1SS133-T2	SI.DIODE	

⚠	Symbol No.	Part No.	Part Name	Description
	DIODE			
	D2501	1SS81-T5	SI.DIODE	
	D2521	V11CA-C1	SI.DIODE	
	D2522	FMV-3FU-F1	SI.DIODE	
	D2523	MTZJ22B-T2	ZENER DIODE	
	D2541	EU2-T3	SI.DIODE	
	D2542	MTZJ3.9B-T2	ZENER DIODE	
	D2551	EU2-T3	SI.DIODE	
	D2552	EU2-T3	SI.DIODE	
	D2553	RH1S-T3	SI.DIODE	
	D2554	RH1S-T3	SI.DIODE	
	D2561-62	ES1F-LFG2	SI.DIODE	
	D2582	MTZJ7.5B-T2	ZENER DIODE	
⚠	D2901	D3SB60	BRIDGE DIODE	
	D2902	RG1C-LFA1	SI.DIODE	
	D2903	MTZJ6.8C-T2	ZENER DIODE	
	D2904	AU01Z-T2	SI.DIODE	
	D2905	AU01Z-T2	SI.DIODE	
	D2906	MTZJ27B-T2	ZENER DIODE	
	D2907	1SS133-T2	SI.DIODE	
	D2908	1SS133-T2	SI.DIODE	
	D2910	MTZJ15B-T2	ZENER DIODE	
	D2911	1SS133-T2	SI.DIODE	
	D2912	MTZJ27B-T2	ZENER DIODE	
	D2931	S1WB/A/6O-4101	SI.DIODE	
	D2933	AU01Z-T2	SI.DIODE	
	D2934	AU01Z-T2	SI.DIODE	
	D2935	1SS133-T2	SI.DIODE	
	D2941	RGP10J-5O25-T3	SI.DIODE	
	D2943	MTZJ7.5B-T2	ZENER DIODE	
	D2944	NJM431L-T	I.C.(MONO-ANA)	
	D2945	1SS133-T2	SI.DIODE	
	D2951	RU4B-F1	SI.DIODE	
	D2952	FMX-G12S	SI.DIODE	
	D2953	RU4B-F1	SI.DIODE	
	D2955-56	FMX-G12S	SI.DIODE	
	D2958	MTZJ33B-T2	ZENER DIODE	
	D2959-60	RK34-LFC4	SI.DIODE	
	D2961	1SR35-40OA-T2	SI.DIODE	
	D2981	1SS133-T2	SI.DIODE	
	D2984	1SS133-T2	SI.DIODE	
	D2985	1SS133-T2	SI.DIODE	
	TRANSISTOR			
	Q2421	DTC124ESA-T	DIGI.TRANSISTOR	
	Q2422	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2461	2SK2459N-F54	F.E.T.	
	Q2462-63	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2464	2SA933AS/QR/-T	SI.TRANSISTOR	
	Q2501	BSN304-T	F.E.T.	
⚠	Q2521	2SC5552-RL	SI.TRANSISTOR	H.OUT
	Q2561-62	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2563	2SC4686A	SI.TRANSISTOR	
	Q2581	2SA1208/ST/Z1-T	SI.TRANSISTOR	
	Q2582	DTC144ESA-T	DIGI.TRANSISTOR	
	Q2941-42	2SC1740S/QR/-T	SI.TRANSISTOR	
	IC			
	IC2401	LA7876NZ	I.C.(MONO-ANA)	
	IC2461	BA10393	I.C.(MONO-ANA)	
	IC2551	BA12T	I.C.(MONO-ANA)	
	IC2901	STR-F6658B/F7	I.C.(HYBRID)	
	IC2931	STR-L472/F7	I.C.(HYBRID)	
	IC2951	SE140N	I.C.(HYBRID)	
	IC2954	SI-8050S	I.C.(HYBRID)	
	IC2955	SI-8033S/F1	I.C.(HYBRID)	
	OTHERS			
	CN2004-06	QGB1506M1-16	CONNECTOR	
	CN2014	QGA2501C5-06Z	EH POST HEADER	
⚠	CP2931	QMFZ043-2R0Z-J1	FUSE	2.0A
⚠	CP2941	ICP-N25-Y	I.C.PROTECT	

⚠	Symbol No.	Part No.	Part Name	Description
	OTHERS			
⚠	CP2955	QMFZ034-4R0Z-J1	FUSE	4.0A
⚠	CP2956	QMFZ034-4R0Z-J1	FUSE	4.0A
	K2401	QQR0621-002Z	BEADS CORE	
	K2522-24	CE41832-001	LEAD CORE	
	K2901	QQR0679-001	FERRITE BEADS	
	K2952	QQR0621-002Z	BEADS CORE	
	K2953	QQR0621-002Z	BEADS CORE	
	K2954	QQR0621-002Z	BEADS CORE	
⚠	LF2901	QQR1253-001	LINE FILTER	
⚠	PC2901	PC123F2	I.C.(PH.COUPLER)	
⚠	PC2931	PC123F2	I.C.(PH.COUPLER)	
⚠	TH2901	QAD0119-9R0	P.THERMISTOR	
⚠	RY2931	QSK0090-001	RELAY	

■CRT SOCKET P.W. BOARD ASS'Y (SMF-3502A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R3101	NRSA63J-123X	MG R	12kΩ 1/16W J
	R3102	NRSA63J-681X	MG R	680Ω 1/16W J
	R3103	NRSA63J-101X	MG R	100Ω 1/16W J
	R3104	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R3105	NRSA63J-102X	MG R	1kΩ 1/16W J
	R3106	NRSA63J-221X	MG R	220Ω 1/16W J
	R3107	NRSA63J-561X	MG R	560Ω 1/16W J
	R3109	NRSA63J-153X	MG R	15kΩ 1/16W J
	R3110	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R3111	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R3112	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3113	NRSA63J-102X	MG R	1kΩ 1/16W J
	R3114	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R3115	NRSA63J-820X	MG R	82Ω 1/16W J
	R3116	QRG01GJ-101	OM R	100Ω 1W J
	R3117	NRSA63J-221X	MG R	220Ω 1/16W J
	R3122	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R3123	QRE121J-563Y	C R	56kΩ 1/2W J
	R3124	NRSA63J-470X	MG R	47Ω 1/16W J
	R3125	QRE121J-563Y	C R	56kΩ 1/2W J
	R3126	NRSA63J-470X	MG R	47Ω 1/16W J
	R3127	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R3128	NRSA63J-390X	MG R	39Ω 1/16W J
	R3129-30	QRE121J-2R7Y	C R	2.7Ω 1/2W J
	R3131	NRSA63J-390X	MG R	39Ω 1/16W J
	R3132	NRSA63J-121X	MG R	120Ω 1/16W J
	R3133	QRL029J-681	OM R	680Ω 2W J
⚠	R3134	QRZ9021-561	F R	560 Ω 1W J
	R3204-06	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3211	NRSA63J-154X	MG R	150kΩ 1/16W J
	R3223-25	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3227	NRSA63J-103X	MG R	10kΩ 1/16W J
	R3228	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3229-31	QRL029J-104	OM R	100kΩ 2W J
	R3232-34	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R3235-37	QRC121K-152Z	COMP.R	1.5kΩ 1/2W K
	R3239	QRZ0107-474Z	C R	470kΩ 1/2W K
⚠	R3241	QRZ0107-105Z	C R	1.0MΩ 1/2W K
	R3242	NRSA63J-103X	MG R	10kΩ 1/16W J
	R3244	NRSA63J-102X	MG R	1kΩ 1/16W J
	R3245-47	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R3301-02	QRE121J-474Y	C R	470kΩ 1/2W J
	R3303-04	NRSA63J-223X	MG R	22kΩ 1/16W J
	R3305	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R3306	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R3310	NRSA63J-0R0X	MG R	0.0Ω 1/16W J

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C3102	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
	C3103	NDC31HJ-121X	C CAP.	120pF 50V J
	C3104	QCB31HK-103Z	C CAP.	0.01µF 50V K
	C3106	QETN1HM-335Z	E CAP.	3.3µF 50V M
	C3107	QETN1CM-107Z	E CAP.	100µF 16V M
	C3110	QETN2CM-106Z	E CAP.	10µF 160V M
	C3111	QCB32HK-472Z	C CAP.	4700pF 500V K
	C3113	QETN2CM-106Z	E CAP.	10µF 160V M
	C3114	QCB32HK-472Z	C CAP.	4700pF 500V K
	C3116-17	QETN1AM-107Z	E CAP.	100µF 10V M
	C3118	QETN1AM-337Z	E CAP.	330µF 10V M
	C3120	NDC31HJ-821X	C CAP.	820pF 50V J
	C3121	NDC31HJ-221X	C CAP.	220pF 50V J
	C3123	NCB31HK-222X	CHIP CAP.	2200pF 50V K
	C3201-03	NDC31HJ-150X	C CAP.	15pF 50V J
	C3204-06	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C3207-09	QETN1EM-476Z	E CAP.	47µF 25V M
	C3210-12	QFK62EK-104Z	MM CAP.	0.1µF 250V K
	C3213-15	NDC31HJ-181X	C CAP.	180pF 50V J
	C3216	QETN1CM-107Z	E CAP.	100µF 16V M
	C3218	QETM2EM-336	E CAP.	33µF 250V M
	C3219	QFZ0097-223	MM CAP.	0.022µF 1250V K
	C3221	QETM2EM-106	E CAP.	10µF 250V M
	C3302	QETN1AM-477Z	E CAP.	470µF 10V M
	COIL			
	L3101	QQL244K-5R6Z	COIL	5.6µH K
	L3201-03	QQL244K-4R7Z	COIL	4.7µH K
	L3204	QQL26AJ-102Z	COIL	1mH J
	DIODE			
	D3101-02	MA111-X	SI.DIODE	
	D3103	RH1S-T3	SI.DIODE	
	D3104	RH1S-T3	SI.DIODE	
	D3204-06	EU01N-T2	SI.DIODE	
	D3208-10	1SR124-400A-T2	SI.DIODE	
	D3211	MA3062/M/-X	ZENER DIODE	
	D3212	MA3130/H/-X	ZENER DIODE	
	D3301	MA111-X	SI.DIODE	
	D3303	MA111-X	SI.DIODE	
	TRANSISTOR			
	Q3101	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q3102	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q3103	2SC1906-T	SI.TRANSISTOR	
	Q3104	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q3105	2SC1627A/OY/-T	SI.TRANSISTOR	
	Q3108	2SA1837	SI.TRANSISTOR	
	Q3109	2SC4793	SI.TRANSISTOR	
	Q3301	2SA1037AK/QR/-X	SI.TRANSISTOR	
	IC			
	IC3201-03	TDA6111Q	I.C.(MONO-ANA)	
	OTHERS			
	K3101	CE41492-001Z	CHOKE COIL	
	K3103-04	CE41492-001Z	CHOKE COIL	
	K3105	QQR0621-002Z	BEADS CORE	
	SG3201-03	QAF0056-501Z	VARISTOR	
⚠	SK3001	QNZ0380-001	C.R.T.SOCKET	

■ FRONT CONTROL P.W. BOARD ASS'Y (SMF-8501A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R8001-02	QRE121J-101Y	C R	100Ω 1/2W J
	R8003	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8004	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R8005	NRSA63J-221X	MG R	220Ω 1/16W J
	R8006	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R8007	NRSA63J-103X	MG R	10kΩ 1/16W J
	R8008	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8010	NRSA63J-103X	MG R	10kΩ 1/16W J
	R8012-13	NRSA63J-103X	MG R	10kΩ 1/16W J
	R8020	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R8021-22	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8035	QRE121J-151Y	C R	150Ω 1/2W J
	R8036	NRSA63J-561X	MG R	560Ω 1/16W J
	R8038	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R8039	NRSA63J-331X	MG R	330Ω 1/16W J
	CAPACITOR			
	C8001-02	NCB31HK-103X	C CAP.	0.01µF 50V K
	C8003	QETN1HM-106Z	E CAP.	10µF 50V M
	C8004	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C8010-11	NCB31HK-472X	C CAP.	4700pF 50V K
	C8019	QETN1CM-107Z	E CAP.	100µF 16V M
	C8022	QETN1EM-476Z	E CAP.	47µF 25V M
⚠	C8901	QFZ9040-474	MF CAP.	0.47µFAC275V M
	DIODE			
	D8001-06	MA111-X	SI.DIODE	
	D8007	P1241-04	C.D.S.	
	D8008	MA111-X	SI.DIODE	
	D8009	SLR-342MG-T16	L.E.D.(GRN)	
	D8010	SPR-39MVWF	L.E.D.	
	D8011	MA111-X	SI.DIODE	
	D8013	SLR-342YY-T16	L.E.D.(YLW)	
	D8014	MA3068/M/-X	ZENER DIODE	
	D8018	MA3033-X	ZENER DIODE	
	TRANSISTOR			
	Q8001	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q8002	DTC124EKA-X	DIGI.TRANSISTOR	
	Q8003-04	DTA124EKA-X	DIGI.TRANSISTOR	
	Q8006-07	DTC124EKA-X	DIGI.TRANSISTOR	
	IC			
	IC8001	GP1U281Q	IFR DETECT UNIT	
	OTHERS			
⚠		CEMG002-001Z	FUSE CLIP	
		CM36626-B01-H	L.E.D.HOLDER	
		CM35921-005-H	CDS HOLDER	
⚠	F8901	QMF51E2-5R0S	FUSE	5.0A
	J8001	QNS0155-001	JACK	
	J8003	QMCC004-C01	MINI DIN JACK	
	J8004	CEMN011-001	JACK	
	J8005	CEMN011-002	JACK	
	J8006	CEMN011-003	JACK	
	LC8002	NQR0169-001X	EMI FILTER	
⚠	LF8901	QQR1253-001	LINE FILTER	
	S8001-06	QSW0619-003Z	PUSH SWITCH	
⚠	S8901	QSW0750-001	PUSH SWITCH	
⚠	VA8901	QAF0052-621	VARISTOR	

■ MICON P.W. BOARD ASS'Y (SMF0M601A-H2)

HV-L29PRO / HV-L29PRO/AU

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0002	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003-05	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0006	NRSA63J-393X	MG R	39kΩ 1/16W J
	R0018-20	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0026	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0055	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0081	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	R0087	NRSA63J-221X	MG R	220Ω 1/16W J
	R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
	R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0093	NRSA63J-221X	MG R	220Ω 1/16W J
	R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0096	NRSA63J-221X	MG R	220Ω 1/16W J
	R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0098	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0100	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0103-04	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0108-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0119	NRSA63J-563X	MG R	56kΩ 1/16W J
	R0120	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0124	NRSA63J-101X	MG R	100Ω 1/16W J
	R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0131	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0132	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0140	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0147-49	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0150	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
	R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0158	NRSA63J-221X	MG R	220Ω 1/16W J
	R0161	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0162	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0163	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0165	NRSA63J-103X	MG R	10kΩ 1/16W J
	CAPACITOR			
	C0001	QETN0JM-477Z	E CAP.	470µF 6.3V M
	C0002	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0003	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0004	QETN0JM-108Z	E CAP.	1000µF 6.3V M
	C0005-06	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0007	NEH71CM-476X	E CAP.	47µF 16V M
	C0008	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0012-13	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0014	NCB31HK-682X	CHIP CAP.	6800pF 50V K
	C0017	NDC31HJ-150X	C CAP.	15pF 50V J

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C0019	NEH71CM-476X	E CAP.	47µF 16V M
	C0020	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0021	NEH71CM-476X	E CAP.	47µF 16V M
	C0023	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0024	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0025	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0026	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0027-28	NEH71CM-476X	E CAP.	47µF 16V M
	C0029	NDC31HJ-151X	C CAP.	150pF 50V J
	C0030-32	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0034-39	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0040	NDC31HJ-330X	C CAP.	33pF 50V J
	C0041	NDC31HJ-270X	C CAP.	27pF 50V J
	C0042-43	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0045-47	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0048	NEH71CM-476X	E CAP.	47µF 16V M
	C0049-50	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0051	NEH71CM-476X	E CAP.	47µF 16V M
	C0052-57	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0059-61	NEH71CM-106X	E CAP.	10µF 16V M
	C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
	C0070	NEH71HM-225X	E CAP.	2.2µF 50V M
	CN0001	QGB1505K1-50	CONNECTOR	
	COIL			
	L0001	NQL092K-4R7X	INDUCTOR	
	L0003	NQL092K-4R7X	INDUCTOR	
	L0005-08	NQL092K-4R7X	INDUCTOR	
	L0009	NQL034K-4R7X	INDUCTOR	
	L0010-14	NQL092K-4R7X	INDUCTOR	
	L0015-16	NQL034K-4R7X	INDUCTOR	
	L0017-22	NQL092K-1R5X	INDUCTOR	
	DIODE			
	D0001	MA111-X	SI.DIODE	
	D0005-08	MA3056/M/-X	ZENER DIODE	
	D0010	MA3068/M/-X	ZENER DIODE	
	TRANSISTOR			
	Q0001-02	2SC2712/YG/-X	SI.TRANSISTOR	
	Q0007	2SA1162/YG/-X	SI.TRANSISTOR	
	Q0013	2SC2712/YG/-X	SI.TRANSISTOR	
	IC			
	IC0001	SDA6000	I.C.(M)	
	IC0002	MR27V3202E	IC	
	IC0003	K4S641632D-TC80	I.C.(D-RAM)	
	IC0004	AT24C32-L29PRO	I.C.	(SERVICE)
	IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0901	TA48M025F-X	I.C.(M)	
	IC0902	TA48M033F-X	I.C.(M)	
	IC0903	MM1437AF-X	I.C.(MONO-ANA)	
	OTHERS			
		CEMS007-008	I.C.SOCKET	
		NNV0001-044	IC SOCKET	
	K0001	NRSA63J-390X	MG R	39Ω 1/16W J
	K0003	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	K0004	NQR0389-003X	FERRITE BEADS	
	LC0001	NQR0313-007X	EMI FILTER	
	LC0002	NQR0431-001X	EMI FILTER	
	X0001	QAX0669-001Z	CRYSTAL	

■ MICON P.W. BOARD ASS'Y (SMF0M602A-H2)

HV-L29PRO/HK

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0002	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003-05	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0006	NRSA63J-393X	MG R	39kΩ 1/16W J
	R0018-20	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0026	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0055	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0081	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	R0087	NRSA63J-221X	MG R	220Ω 1/16W J
	R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
	R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0093	NRSA63J-221X	MG R	220Ω 1/16W J
	R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0096	NRSA63J-221X	MG R	220Ω 1/16W J
	R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0098	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0100	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0103-04	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0108-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0119	NRSA63J-563X	MG R	56kΩ 1/16W J
	R0120	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0124	NRSA63J-101X	MG R	100Ω 1/16W J
	R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0131	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0132	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0140	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0147-49	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0150	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
	R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0158	NRSA63J-221X	MG R	220Ω 1/16W J
	R0161	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0162	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0163	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0165	NRSA63J-103X	MG R	10kΩ 1/16W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0001	QETN0JM-477Z	E CAP.	470µF 6.3V M
	C0002	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0003	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0004	QETN0JM-108Z	E CAP.	1000µF 6.3V M
	C0005-06	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0007	NEH71CM-476X	E CAP.	47µF 16V M
	C0008	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0012-13	NCF31CZ-104X	C CAP.	0.1µF 16V Z

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0014	NCB31HK-682X	CHIP CAP.	6800pF 50V K
	C0017	NDC31HJ-150X	C CAP.	15pF 50V J
	C0019	NEH71CM-476X	E CAP.	47µF 16V M
	C0020	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0021	NEH71CM-476X	E CAP.	47µF 16V M
	C0023	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0024	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0025	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0026	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0027-28	NEH71CM-476X	E CAP.	47µF 16V M
	C0029	NDC31HJ-151X	C CAP.	150pF 50V J
	C0030-32	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0034-39	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0040	NDC31HJ-330X	C CAP.	33pF 50V J
	C0041	NDC31HJ-270X	C CAP.	27pF 50V J
	C0042-43	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0045-47	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0048	NEH71CM-476X	E CAP.	47µF 16V M
	C0049-50	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0051	NEH71CM-476X	E CAP.	47µF 16V M
	C0052-57	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0059-61	NEH71CM-106X	E CAP.	10µF 16V M
	C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
	C0070	NEH71HM-225X	E CAP.	2.2µF 50V M

COIL

⚠	Symbol No.	Part No.	Part Name	Description
	L0001	NQL092K-4R7X	INDUCTOR	
	L0003	NQL092K-4R7X	INDUCTOR	
	L0005-08	NQL092K-4R7X	INDUCTOR	
	L0009	NQL034K-4R7X	INDUCTOR	
	L0010-14	NQL092K-4R7X	INDUCTOR	
	L0015-16	NQL034K-4R7X	INDUCTOR	
	L0017-22	NQL092K-1R5X	INDUCTOR	
	LC0001	NQR0313-007X	EMI FILTER	
	LC0002	NQR0431-001X	EMI FILTER	

DIODE

⚠	Symbol No.	Part No.	Part Name	Description
	D0001	MA111-X	SI.DIODE	
	D0005-08	MA3056/M/-X	ZENER DIODE	
	D0010	MA3068/M/-X	ZENER DIODE	

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	Q0001-02	2SC2712/YG/-X	SI.TRANSISTOR	
	Q0007	2SA1162/YG/-X	SI.TRANSISTOR	
	Q0013	2SC2712/YG/-X	SI.TRANSISTOR	

IC

⚠	Symbol No.	Part No.	Part Name	Description
	IC0001	SDA6000	I.C.(M)	
	IC0002	MR27V3202E	IC	
	IC0003	K4S641632D-TC80	I.C.(D-RAM)	
	IC0004	AT24C32-L29PRO	I.C.	(SERVICE)
	IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0901	TA48M025F-X	I.C.(M)	
	IC0902	TA48M033F-X	I.C.(M)	
	IC0903	MM1437AF-X	I.C.(MONO-ANA)	

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description
		CEMS007-008	I.C.SOCKET	
		NNV0001-044	IC SOCKET	
	CN0001	QGB1505K1-50	CONNECTOR	
	K0001	NRSA63J-390X	MG R	39Ω 1/16W J
	K0003	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	K0004	NQR0389-003X	FERRITE BEADS	
	X0001	QAX0669-001Z	CRYSTAL	

■ MICON P.W. BOARD ASS'Y (SMF0M603A-H2)

HV-L29PRO/-A

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0002	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003-05	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0006	NRSA63J-393X	MG R	39kΩ 1/16W J
	R0018-20	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0026	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0055	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0081	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	R0087	NRSA63J-221X	MG R	220Ω 1/16W J
	R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
	R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0093	NRSA63J-221X	MG R	220Ω 1/16W J
	R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0096	NRSA63J-221X	MG R	220Ω 1/16W J
	R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0098	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0100	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0103-04	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0108-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0119	NRSA63J-563X	MG R	56kΩ 1/16W J
	R0120	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0124	NRSA63J-101X	MG R	100Ω 1/16W J
	R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0131	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0132	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0140	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0147-49	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0150	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
	R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0158	NRSA63J-221X	MG R	220Ω 1/16W J
	R0161	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0162	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0163	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0165	NRSA63J-103X	MG R	10kΩ 1/16W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0001	QETN0JM-477Z	E CAP.	470µF 6.3V M
	C0002	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0003	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0004	QETN0JM-108Z	E CAP.	1000µF 6.3V M
	C0005-06	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0007	NEH71CM-476X	E CAP.	47µF 16V M
	C0008	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0012-13	NCF31CZ-104X	C CAP.	0.1µF 16V Z

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0014	NCB31HK-682X	CHIP CAP.	6800pF 50V K
	C0017	NDC31HJ-150X	C CAP.	15pF 50V J
	C0019	NEH71CM-476X	E CAP.	47µF 16V M
	C0020	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0021	NEH71CM-476X	E CAP.	47µF 16V M
	C0023	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0024	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0025	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0026	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0027-28	NEH71CM-476X	E CAP.	47µF 16V M
	C0029	NDC31HJ-151X	C CAP.	150pF 50V J
	C0030-32	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0034-39	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0040	NDC31HJ-330X	C CAP.	33pF 50V J
	C0041	NDC31HJ-270X	C CAP.	27pF 50V J
	C0042-43	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0045-47	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0048	NEH71CM-476X	E CAP.	47µF 16V M
	C0049-50	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0051	NEH71CM-476X	E CAP.	47µF 16V M
	C0052-57	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0059-61	NEH71CM-106X	E CAP.	10µF 16V M
	C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
	C0070	NEH71HM-225X	E CAP.	2.2µF 50V M

COIL

⚠	Symbol No.	Part No.	Part Name	Description
	L0001	NQL092K-4R7X	INDUCTOR	
	L0003	NQL092K-4R7X	INDUCTOR	
	L0005-08	NQL092K-4R7X	INDUCTOR	
	L0009	NQL034K-4R7X	INDUCTOR	
	L0010-14	NQL092K-4R7X	INDUCTOR	
	L0015-16	NQL034K-4R7X	INDUCTOR	
	L0017-22	NQL092K-1R5X	INDUCTOR	
	LC0001	NQR0313-007X	EMI FILTER	
	LC0002	NQR0431-001X	EMI FILTER	

DIODE

⚠	Symbol No.	Part No.	Part Name	Description
	D0001	MA111-X	SI.DIODE	
	D0005-08	MA3056/M/-X	ZENER DIODE	
	D0010	MA3068/M/-X	ZENER DIODE	

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	Q0001-02	2SC2712/YG/-X	SI.TRANSISTOR	
	Q0007	2SA1162/YG/-X	SI.TRANSISTOR	
	Q0013	2SC2712/YG/-X	SI.TRANSISTOR	

IC

⚠	Symbol No.	Part No.	Part Name	Description
	IC0001	SDA6000	I.C.(M)	
	IC0002	MR27V3202E	IC	
	IC0003	K4S641632D-TC80	I.C.(D-RAM)	
	IC0004	AT24C32-L29PRO	I.C.	(SERVICE)
	IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0901	TA48M025F-X	I.C.(M)	
	IC0902	TA48M033F-X	I.C.(M)	
	IC0903	MM1437AF-X	I.C.(MONO-ANA)	

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description
		CEMS007-008	I.C.SOCKET	
		NNV0001-044	IC SOCKET	
	CN0001	QGB1505K1-50	CONNECTOR	
	K0001	NRSA63J-390X	MG R	39Ω 1/16W J
	K0003	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	K0004	NQR0389-003X	FERRITE BEADS	
	X0001	QAX0669-001Z	CRYSTAL	

■ MICON P.W. BOARD ASS'Y (SMF0M604A-H2)

HV-L29PRO/EE

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0002	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003-05	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0006	NRSA63J-393X	MG R	39kΩ 1/16W J
	R0018-20	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0026	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0055	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0081	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	R0087	NRSA63J-221X	MG R	220Ω 1/16W J
	R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
	R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0093	NRSA63J-221X	MG R	220Ω 1/16W J
	R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0096	NRSA63J-221X	MG R	220Ω 1/16W J
	R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0098	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0100	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0103-04	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0108-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0119	NRSA63J-563X	MG R	56kΩ 1/16W J
	R0120	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0124	NRSA63J-101X	MG R	100Ω 1/16W J
	R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0131	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0132	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0140	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0147-49	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0150	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
	R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0158	NRSA63J-221X	MG R	220Ω 1/16W J
	R0161	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0162	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0163	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0165	NRSA63J-103X	MG R	10kΩ 1/16W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0001	QETN0JM-477Z	E CAP.	470µF 6.3V M
	C0002	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0003	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0004	QETN0JM-108Z	E CAP.	1000µF 6.3V M
	C0005-06	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0007	NEH71CM-476X	E CAP.	47µF 16V M
	C0008	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0012-13	NCF31CZ-104X	C CAP.	0.1µF 16V Z

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0014	NCB31HK-682X	CHIP CAP.	6800pF 50V K
	C0017	NDC31HJ-150X	C CAP.	15pF 50V J
	C0019	NEH71CM-476X	E CAP.	47µF 16V M
	C0020	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0021	NEH71CM-476X	E CAP.	47µF 16V M
	C0023	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0024	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0025	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0026	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0027-28	NEH71CM-476X	E CAP.	47µF 16V M
	C0029	NDC31HJ-151X	C CAP.	150pF 50V J
	C0030-32	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0034-39	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0040	NDC31HJ-330X	C CAP.	33pF 50V J
	C0041	NDC31HJ-270X	C CAP.	27pF 50V J
	C0042-43	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0045-47	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0048	NEH71CM-476X	E CAP.	47µF 16V M
	C0049-50	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0051	NEH71CM-476X	E CAP.	47µF 16V M
	C0052-57	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0059-61	NEH71CM-106X	E CAP.	10µF 16V M
	C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
	C0070	NEH71HM-225X	E CAP.	2.2µF 50V M

COIL

⚠	Symbol No.	Part No.	Part Name	Description
	L0001	NQL092K-4R7X	INDUCTOR	
	L0003	NQL092K-4R7X	INDUCTOR	
	L0005-08	NQL092K-4R7X	INDUCTOR	
	L0009	NQL034K-4R7X	INDUCTOR	
	L0010-14	NQL092K-4R7X	INDUCTOR	
	L0015-16	NQL034K-4R7X	INDUCTOR	
	L0017-22	NQL092K-1R5X	INDUCTOR	

DIODE

⚠	Symbol No.	Part No.	Part Name	Description
	D0001	MA111-X	SI.DIODE	
	D0005-08	MA3056/M/-X	ZENER DIODE	
	D0010	MA3068/M/-X	ZENER DIODE	

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	Q0001-02	2SC2712/YG/-X	SI.TRANSISTOR	
	Q0007	2SA1162/YG/-X	SI.TRANSISTOR	
	Q0013	2SC2712/YG/-X	SI.TRANSISTOR	

IC

⚠	Symbol No.	Part No.	Part Name	Description
	IC0001	SDA6000	I.C.(M)	
	IC0002	MR27V3202E	IC	
	IC0003	K4S641632D-TC80	I.C.(D-RAM)	
	IC0004	AT24C32-L29PRO	I.C.	(SERVICE)
	IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0901	TA48M025F-X	I.C.(M)	
	IC0902	TA48M033F-X	I.C.(M)	
	IC0903	MM1437AF-X	I.C.(MONO-ANA)	

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description
		CEMS007-008	I.C.SOCKET	
		NNV0001-044	IC SOCKET	
	CN0001	QGB1505K1-50	CONNECTOR	
	K0001	NRSA63J-390X	MG R	39Ω 1/16W J
	K0003	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	K0004	NQR0389-003X	FERRITE BEADS	
	LC0001	NQR0313-007X	EMI FILTER	
	LC0002	NQR0431-001X	EMI FILTER	
	X0001	QAX0669-001Z	CRYSTAL	

■ AV SW P.W. BOARD ASS'Y (SMF0S501A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R0002-03	NRSA63J-101X	MG R	100Ω 1/16W J
	R0101	NRSA63J-750X	MG R	75Ω 1/16W J
	R0102	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0103-04	NRSA63J-750X	MG R	75Ω 1/16W J
	R0105-06	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0107	NRSA63J-101X	MG R	100Ω 1/16W J
	R0108	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0109	NRSA63J-101X	MG R	100Ω 1/16W J
	R0110	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0111-13	NRSA63J-101X	MG R	100Ω 1/16W J
	R0114	NRSA63J-750X	MG R	75Ω 1/16W J
	R0115	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0116	NRSA63J-750X	MG R	75Ω 1/16W J
	R0117	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0118-19	NRSA63J-750X	MG R	75Ω 1/16W J
	R0120-21	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0122	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0123	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0124	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0125	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0126-27	NRSA63J-391X	MG R	390Ω 1/16W J
	R0128	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0129-30	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0131	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0132	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0133	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0134	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0135	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0136	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0137	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0138	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0139	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0140	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R0141-42	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0143-49	NRSA63J-101X	MG R	100Ω 1/16W J
	R0150	NRSA63J-750X	MG R	75Ω 1/16W J
	R0151	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0152	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0153	NRSA63J-750X	MG R	75Ω 1/16W J
	R0154	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0155	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0156	NRSA63J-750X	MG R	75Ω 1/16W J
	R0157	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R0158-59	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0160	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R0161-66	NRSA63J-101X	MG R	100Ω 1/16W J
	R0167	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0168	NRSA63J-101X	MG R	100Ω 1/16W J
	R0169	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0170-71	NRSA63J-221X	MG R	220Ω 1/16W J
	R0172	NRSA63J-750X	MG R	75Ω 1/16W J
	R0173	QRK126J-151X	C R	150Ω 1/2W J
	R0174	NRSA63J-101X	MG R	100Ω 1/16W J
	R0175	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0176	NRSA63J-181X	MG R	180Ω 1/16W J
	R0179	NRSA63J-181X	MG R	180Ω 1/16W J
	R0181	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0183	QRE141J-562Y	C R	5.6kΩ 1/4W J
	R0601	NRSA63J-225X	MG R	2.2MΩ 1/16W J
	R0602	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0603	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0604	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0605	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R0606	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0607	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0608	NRSA63J-154X	MG R	150kΩ 1/16W J
	R0609	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0610	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0611	NRSA63J-105X	MG R	1MΩ 1/16W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C0001	NCB31HK-222X	CHIP CAP.	2200pF 50V K
	C0002	QETN1HM-106Z	E CAP.	10µF 50V M
	C0003	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0004	QETN1CM-108Z	E CAP.	1000µF 16V M
	C0005	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0006	QETN1HM-106Z	E CAP.	10µF 50V M
	C0011-12	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0013	QETN1HM-106Z	E CAP.	10µF 50V M
	C0101-02	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0103	QETN1HM-106Z	E CAP.	10µF 50V M
	C0104	QETN1HM-105Z	E CAP.	1µF 50V M
	C0105	QETN1HM-106Z	E CAP.	10µF 50V M
	C0106	QETN1HM-105Z	E CAP.	1µF 50V M
	C0107	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0108-09	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0110	QETN1HM-106Z	E CAP.	10µF 50V M
	C0111-12	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0113	QETN1AM-108Z	E CAP.	1000µF 10V M
	C0114-15	NCB31HK-472X	C CAP.	4700pF 50V K
	C0116-20	QETN1HM-106Z	E CAP.	10µF 50V M
	C0121-22	QETN1HM-105Z	E CAP.	1µF 50V M
	C0123	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0124-25	QETN1HM-105Z	E CAP.	1µF 50V M
	C0126	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C0127	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0128-31	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0132	QETN1HM-106Z	E CAP.	10µF 50V M
	C0133	QETN1HM-105Z	E CAP.	1µF 50V M
	C0134	QETN1HM-106Z	E CAP.	10µF 50V M
	C0135	QETN1HM-105Z	E CAP.	1µF 50V M
	C0136	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0137	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C0138	NCF31AZ-105X	C CAP.	1µF 10V Z
	C0139	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0141	QETN1CM-477Z	E CAP.	470µF 16V M
	C0142	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0143	QETN1HM-106Z	E CAP.	10µF 50V M
	C0144	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0145	QETN1CM-107Z	E CAP.	100µF 16V M
	C0146-49	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0156	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C0601	QENC1HM-475Z	BP E CAP.	4.7µF 50V M
	C0602	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C0603	QETN1HM-106Z	E CAP.	10µF 50V M
	C0604	QETN1CM-107Z	E CAP.	100µF 16V M
	C0605	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0606-07	QETN1HM-106Z	E CAP.	10µF 50V M
	C0608	QENC1HM-475Z	BP E CAP.	4.7µF 50V M
	C0609-10	QENC1CM-226Z	BP E CAP.	22µF 16V M
	C0611	QETN1HM-105Z	E CAP.	1µF 50V M
	C0612	QETN1HM-106Z	E CAP.	10µF 50V M
	C0613	QETN1CM-107Z	E CAP.	100µF 16V M
	C0614	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0615	NCB31EK-273X	CHIP CAP.	0.027µF 25V K
	C0616	QENC1CM-226Z	BP E CAP.	22µF 16V M
	C0617	QETN1AM-107Z	E CAP.	100µF 10V M
	C0618	NCB31CK-563X	CHIP CAP.	0.056µF 16V K
	C0619	NCB31EK-393X	CHIP CAP.	0.039µF 25V K
	C0620	QETN1HM-106Z	E CAP.	10µF 50V M
	C1621	QETN1HM-476Z	E CAP.	47µF 50V M

COIL

⚠	Symbol No.	Part No.	Part Name	Description
	L0001	QQL244K-270Z	PEAKING COIL	
	L0002	QQL244K-100Z	COIL	10µH K
	L0011	QQL244K-100Z	COIL	10µH K

DIODE

⚠	Symbol No.	Part No.	Part Name	Description
	D0104-09	MA3120/M/-X	ZENER DIODE	
	D0110	MA3056/M/-X	ZENER DIODE	

⚠	Symbol No.	Part No.	Part Name	Description
	TRANSISTOR			
	Q0101	DTC323TK-X	DIGI.TRANSISTOR	
	Q0102-03	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0104	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0105	DTC323TK-X	DIGI.TRANSISTOR	
	Q0106-07	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0110	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q0111	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0113	2SC2412K/QR/-X	SI.TRANSISTOR	
	IC			
	IC0101	CXA2069Q	I.C.(MONO-ANA)	
	IC0601	AN5285K	I.C.(MONO-ANA)	
	IC0602	AN7395S-W	I.C.(MONO-ANA)	
	OTHERS			
	CN0001	QGB15O5K1-50	CONNECTOR	
	TU0001	QAUO217-001	TUNER	
	J0101	QNZO454-001	PIN JACK	
	J0102	QNNO349-001	PIN JACK	
	J0103	QNNO349-002	PIN JACK	
	J0104	QNNO348-001	PIN JACK	
	J0105	QNNO349-001	PIN JACK	
	J0106	QNSO001-001	JACK	

■ SYNC SEP PWB P.W. BOARD ASS'Y (SMF0V501A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0301-02	NRSA63J-101X	MG R	100Ω 1/16W J
	R0303	NRSA63J-331X	MG R	330Ω 1/16W J
	R0304	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0305-06	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	CAPACITOR			
	C0301	QETN1HM-105Z	E CAP.	1µF 50V M
	C0302	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0303	QETN1CM-107Z	E CAP.	100µF 16V M
	C0304-05	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0306	QETN1HM-225Z	E CAP.	2.2µF 50V M
	IC			
	IC0301	TA1318N	I.C.(M)	
	OTHERS			
	CN0015	QGB25O1K1-10	JL PLUG	
	X0301	CSB503F30-T2	CER.RESONATOR	

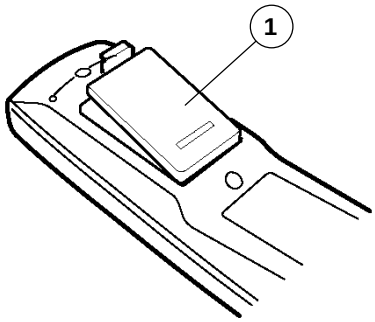
■ 100Hz P.W. BOARD ASS'Y (SMF0Z501A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0001-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0010-12	NRSA63J-101X	MG R	100Ω 1/16W J
	R0101	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0102-03	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0104	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0105-06	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0107-13	NRSA63J-750X	MG R	75Ω 1/16W J
	R0121	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0123	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0124-25	NRSA63J-101X	MG R	100Ω 1/16W J
	R0132-39	NRSA63J-100X	MG R	10Ω 1/16W J
	R0141	NRSA63J-100X	MG R	10Ω 1/16W J
	R0151	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0152-53	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0154	NRSA63J-750X	MG R	75Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0170	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0179-86	NRSA63J-100X	MG R	10Ω 1/16W J
	R0188	NRSA63J-100X	MG R	10Ω 1/16W J
	R0201	NRSA63J-121X	MG R	120Ω 1/16W J
	R0202-03	NRSA63J-101X	MG R	100Ω 1/16W J
	R0204	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0217	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0218	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0219	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0220	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0221	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0223	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0225	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0250	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0251	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0252	NRSA63J-151X	MG R	150Ω 1/16W J
	R0254	NRSA63J-391X	MG R	390Ω 1/16W J
	R0255-56	NRSA63J-221X	MG R	220Ω 1/16W J
	R0257	NRSA63J-271X	MG R	270Ω 1/16W J
	R0258	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0259	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0261	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0264	NRSA63J-391X	MG R	390Ω 1/16W J
	R0271	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0274	NRSA63J-391X	MG R	390Ω 1/16W J
	R0281	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0301-03	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0304-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R0306-08	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0321	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0322	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0323	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0331	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0332	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0333	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0341	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0342	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0343	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0344	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0345	NRSA63J-101X	MG R	100Ω 1/16W J
	R0351	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0361	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0371	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0401	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0402	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0404	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0407	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0409	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	CAPACITOR			
	C0001	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0002	NEH71CM-476X	E CAP.	47µF 16V M
	C0003	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0004	NEH71CM-476X	E CAP.	47µF 16V M

⚠	Symbol No.	Part No.	Part Name	Description
CAPACITOR				
	C0005	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0006	NEH71CM-476X	E CAP.	47µF 16V M
	C0007-09	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
	C0101	NEH71CM-106X	E CAP.	10µF 16V M
	C0102	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0103	NEH71CM-476X	E CAP.	47µF 16V M
	C0104	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0105	NDC31HJ-102X	C CAP.	1000pF 50V J
	C0106	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0107	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0108	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0109	NDC31HJ-391X	C CAP.	390pF 50V J
	C0110	NEH71CM-106X	E CAP.	10µF 16V M
	C0111	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0112	NDC31HJ-331X	C CAP.	330pF 50V J
	C0113-18	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0119-24	NDC31HJ-331X	C CAP.	330pF 50V J
	C0125-26	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
	C0128	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0129	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0130	NDC31HJ-391X	C CAP.	390pF 50V J
	C0131	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0132	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0133	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0134	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C0136-37	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C0138	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0139	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0140	NEH71CM-476X	E CAP.	47µF 16V M
	C0141	NDC31HJ-100X	C CAP.	10pF 50V J
	C0151	NEH71CM-106X	E CAP.	10µF 16V M
	C0152	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0153	NEH71CM-476X	E CAP.	47µF 16V M
	C0154	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0155	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0156	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0157	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0158	NDC31HJ-391X	C CAP.	390pF 50V J
	C0159	NEH71CM-106X	E CAP.	10µF 16V M
	C0160	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0161	NDC31HJ-331X	C CAP.	330pF 50V J
	C0162-67	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0174-75	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
	C0177	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0178	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0179	NDC31HJ-391X	C CAP.	390pF 50V J
	C0180	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0181	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0182	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0183	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C0185-86	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C0187	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0188	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0189	NEH71CM-476X	E CAP.	47µF 16V M
	C0191	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0201	NEH71CM-476X	E CAP.	47µF 16V M
	C0202-05	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0206	NEH71CM-476X	E CAP.	47µF 16V M
	C0207-11	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0212-13	NDC31HJ-180X	C CAP.	18pF 50V J
	C0214-17	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0218	NDC31HJ-561X	C CAP.	560pF 50V J
	C0219	NEH71CM-476X	E CAP.	47µF 16V M
	C0220-35	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0237-38	NEH71CM-106X	E CAP.	10µF 16V M
	C0239-44	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0251	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
	C0252-53	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0254	NDC31HJ-120X	C CAP.	12pF 50V J
	C0255	NDC31HJ-270X	C CAP.	27pF 50V J
	C0256	NEH71CM-106X	E CAP.	10µF 16V M
	C0261	NDC31HJ-4R0X	C CAP.	4.0pF 50V J

⚠	Symbol No.	Part No.	Part Name	Description
CAPACITOR				
	C0262-63	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0264	NDC31HJ-120X	C CAP.	12pF 50V J
	C0265	NDC31HJ-270X	C CAP.	27pF 50V J
	C0271	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
	C0272-73	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0274	NDC31HJ-120X	C CAP.	12pF 50V J
	C0275	NDC31HJ-270X	C CAP.	27pF 50V J
	C0301	NEH71CM-476X	E CAP.	47µF 16V M
	C0302-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0351	NEH71CM-476X	E CAP.	47µF 16V M
	C0352	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0402-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0404	NDC31HJ-330X	C CAP.	33pF 50V J
COIL				
	L0001-03	NQL092K-1R5X	INDUCTOR	
	L0101	NQL034K-150X	INDUCTOR	
	L0102-08	NQL092K-3R3X	INDUCTOR	
	L0109	NQL034K-6R8X	INDUCTOR	
	L0151	NQL034K-150X	INDUCTOR	
	L0159	NQL034K-6R8X	INDUCTOR	
	L0201-03	NQL034K-100X	INDUCTOR	
	L0204	QQL244K-4R7Z	COIL	4.7µH K
	L0205-08	NQL034K-100X	INDUCTOR	
	L0209-10	NQL092K-1R5X	INDUCTOR	
	L0251	NQL092K-5R6X	INDUCTOR	
	L0261	NQL092K-5R6X	INDUCTOR	
	L0271	NQL092K-5R6X	INDUCTOR	
	LC0010-12	NQR0313-009X	EMI FILTER	
	LC0013	NQR0313-004X	EMI FILTER	
	LC0014-15	NQR0313-007X	EMI FILTER	
DIODE				
	D0401	MA111-X	SI.DIODE	
TRANSISTOR				
	Q0101-02	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0151	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0201	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0251-52	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0253	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0261	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0271	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0301-03	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0321-22	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0331-32	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0341	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0342	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0351	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0361	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0371	2SA1037AK/QR/-X	SI.TRANSISTOR	
IC				
	IC0101	VPC3230D-QA-B3	I.C.(M)	
	IC0151	VPC3230D-QA-B3	I.C.(M)	
	IC0201	SAA4979H/V1	I.C.(MONO-ANA)	
	IC0202	OM4994H	I.C.(M)	
	IC0203-05	SAA4955HL/V1	I.C.(MONO-ANA)	
	IC0206-10	TC7W08F-X	I.C.(ECL-LOGIC)	
	IC0211	TC7WHU04FU-X	I.C.(DIGI-MOS)	
	IC0301	TDA9178T/N1-X	I.C.(MONO-ANA)	
	IC0351	TC4053BF/N/-XE	I.C.(DIGI-MOS)	
	IC0401	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0402	TC7WH34FU-X	I.C.(DIGI-MOS)	
OTHERS				
	CN0003	QGB1505K1-50	CONNECTOR	
	X0101	QAX0655-001Z	CRYSTAL	
	X0151	QAX0655-001Z	CRYSTAL	
	X0201	QAX0273-001Z	CRYSTAL	
	Y0101-08	NRSA63J-0R0X	MG R	0.0Ω 1/16W J

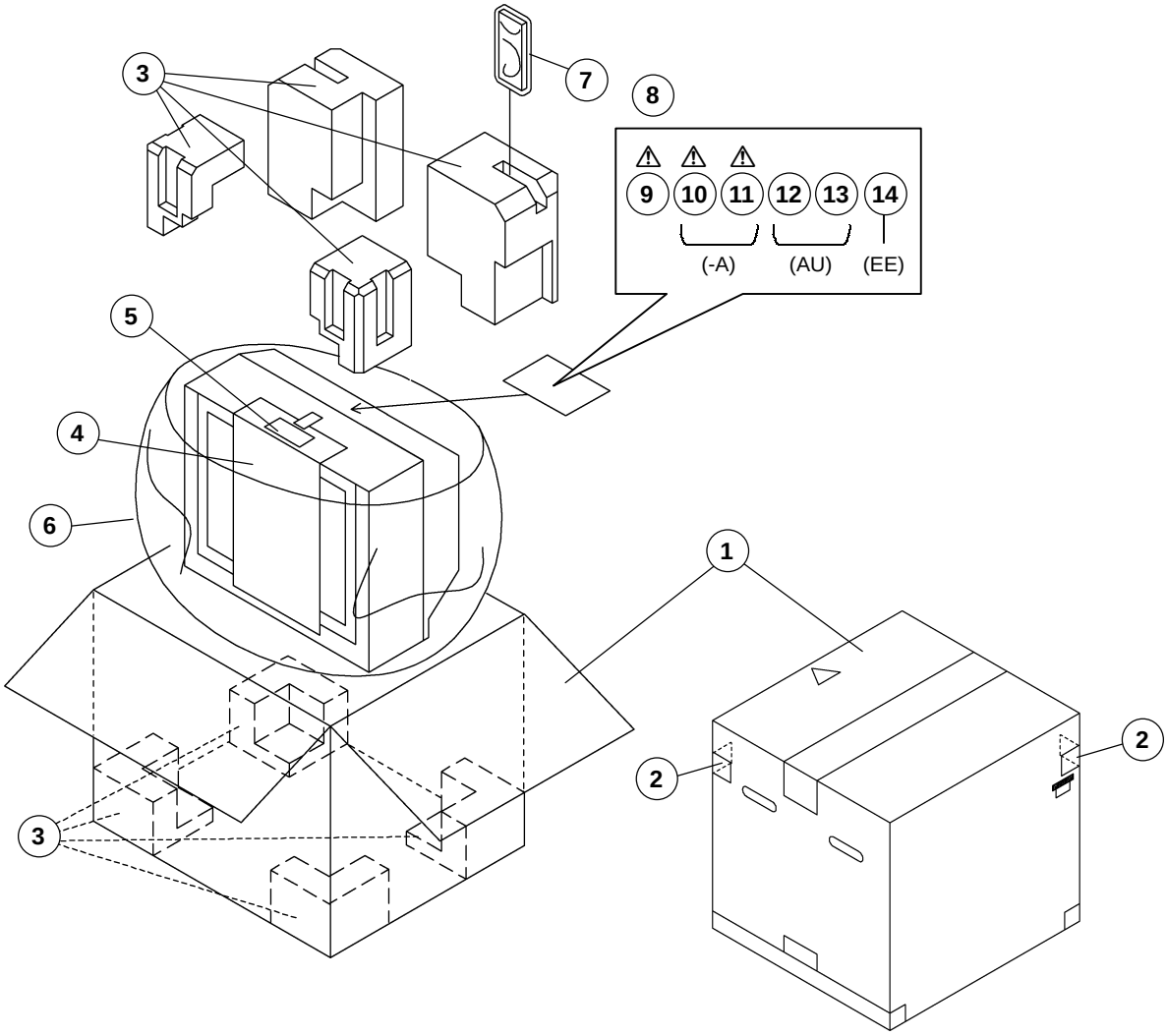
REMOTE CONTROL UNIT PARTS LIST



⚠ Ref.No.	Part No.	Part Name	Description
1	BKL11C204A	BATTERY COVER	(RM-C214-1C/RM-C215-1C)

PACKING

..



PACKING PARTS LIST

HV-L29PRO

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-018A-H	PACKING CASE	
	2	GG20012-001A-H	CORNER LABEL	
	3	LC11066-002B-H	CUSHION ASSY	8pcs in 1set
	4	LC30946-001A-H	PROTECTOR	
	5	LC30947-002A-H	CAUTION SHEET	
	6	CP30967-004-H	POLY BAG	
	7	RM-C214-1C	REMOCON UNIT	
	8	CP30966-001-H	POLY BAG	
⚠	9	LCT0956-001A-H	INST.BOOK	

HV-L29PRO/-A

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-018A-H	PACKING CASE	
	2	GG20012-001A-H	CORNER LABEL	
	3	LC11066-002B-H	CUSHION ASSY	8pcs in 1set
	4	LC30946-001A-H	PROTECTOR	
	5	LC30947-002A-H	CAUTION SHEET	
	6	CP30967-004-H	POLY BAG	
	7	RM-C214-1C	REMOCON UNIT	
	8	CP30966-001-H	POLY BAG	
⚠	9	LCT0956-001A-H	INST.BOOK	
⚠	10	LCT0957-001B-H	DIGEST MANUAL	
⚠	11	QAM0055-001	CONVERSION PLUG	

HV-L29PRO/AU

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-018A-H	PACKING CASE	
	2	GG20012-001A-H	CORNER LABEL	
	3	LC11066-002B-H	CUSHION ASSY	8pcs in 1set
	4	LC30946-001A-H	PROTECTOR	
	5	LC30947-002A-H	CAUTION SHEET	
	6	CP30967-004-H	POLY BAG	
	7	RM-C214-1C	REMOCON UNIT	
	8	CP30966-001-H	POLY BAG	
⚠	9	LCT0956-001A-H	INST.BOOK	
	12	BT-56001-2	WARRANTY CARD	
	13	BT-56002-2	S CENTER LIST	

HV-L29PRO/EE

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-018A-H	PACKING CASE	
	2	GG20012-001A-H	CORNER LABEL	
	3	LC11066-002B-H	CUSHION ASSY	8pcs in 1set
	4	LC30946-001A-H	PROTECTOR	
	5	LC30947-002A-H	CAUTION SHEET	
	6	CP30967-004-H	POLY BAG	
	7	RM-C214-1C	REMOCON UNIT	
	8	CP30966-001-H	POLY BAG	
⚠	9	LCT0959-001A-H	INST BOOK	
	14	BT-54012-2	WARRANTY CARD	

HV-L29PRO/HK

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-018A-H	PACKING CASE	
	2	GG20012-001A-H	CORNER LABEL	
	3	LC11066-002B-H	CUSHION ASSY	8pcs in 1set
	4	LC30946-001A-H	PROTECTOR	
	5	LC30947-002A-H	CAUTION SHEET	
	6	CP30967-004-H	POLY BAG	
	7	RM-C215-1C	REMOCON UNIT	
	8	CP30966-001-H	POLY BAG	
⚠	9	LCT0958-001A-H	INST BOOK	

Memo

Memo

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SEMICONDUCTOR SHAPES

TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
E C B	E C B	B C E (G)(D)(S)	E C B	E C B	CHIP TR C B E

IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
OUT E IN	IN E OUT	1 → N	1 → N	1 N

CHIP IC

TOP VIEW		
N N N 1 N	1 N	

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal : Colour bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒ 20μS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

∗Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]
●Rated allowable power
No indication :1/10 [W]
Others :As specified
●Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor
*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value
1 or higher :[pF]
less than 1 :[μF]
●Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage [V]
AC indicated :AC withstand voltage [V]
*Electrolytic Capacitors
47/50[Example]:Capacitance value [μF]/withstand voltage[V]

●Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils

No unit :[μH]
Others :As specified

(4)Power Supply

:B1 :B2(12V)
:9V :5V
*Respective voltage values are indicated

(5)Test point

:Test point :Only test point display

(6)Connecting method

:Connector :Wrapping or soldering
:Receptacle

(7)Ground symbol

:LIVE side ground
:ISOLATED(NEUTRAL) side ground
:EARTH ground
:DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

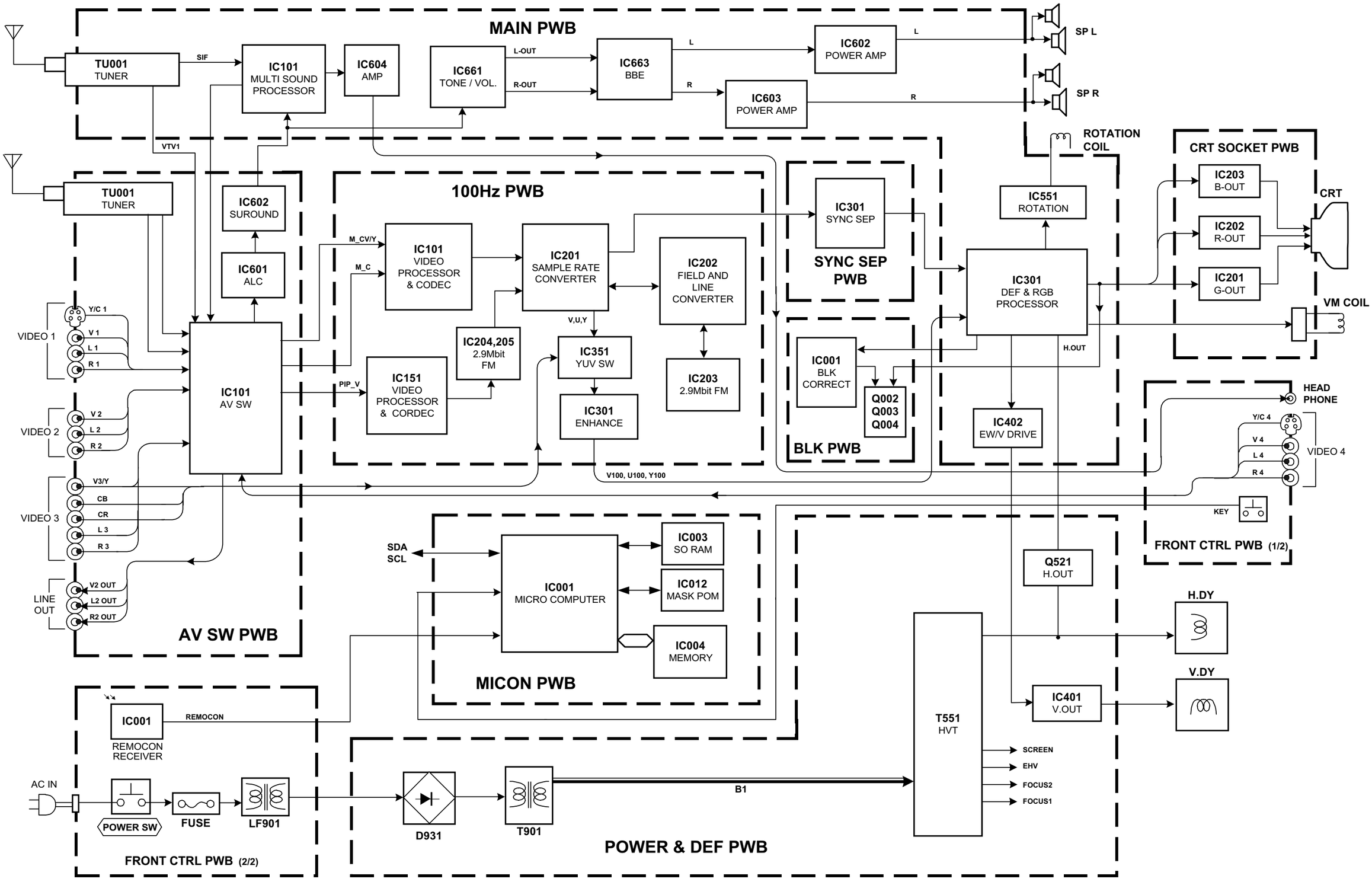
(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇**Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

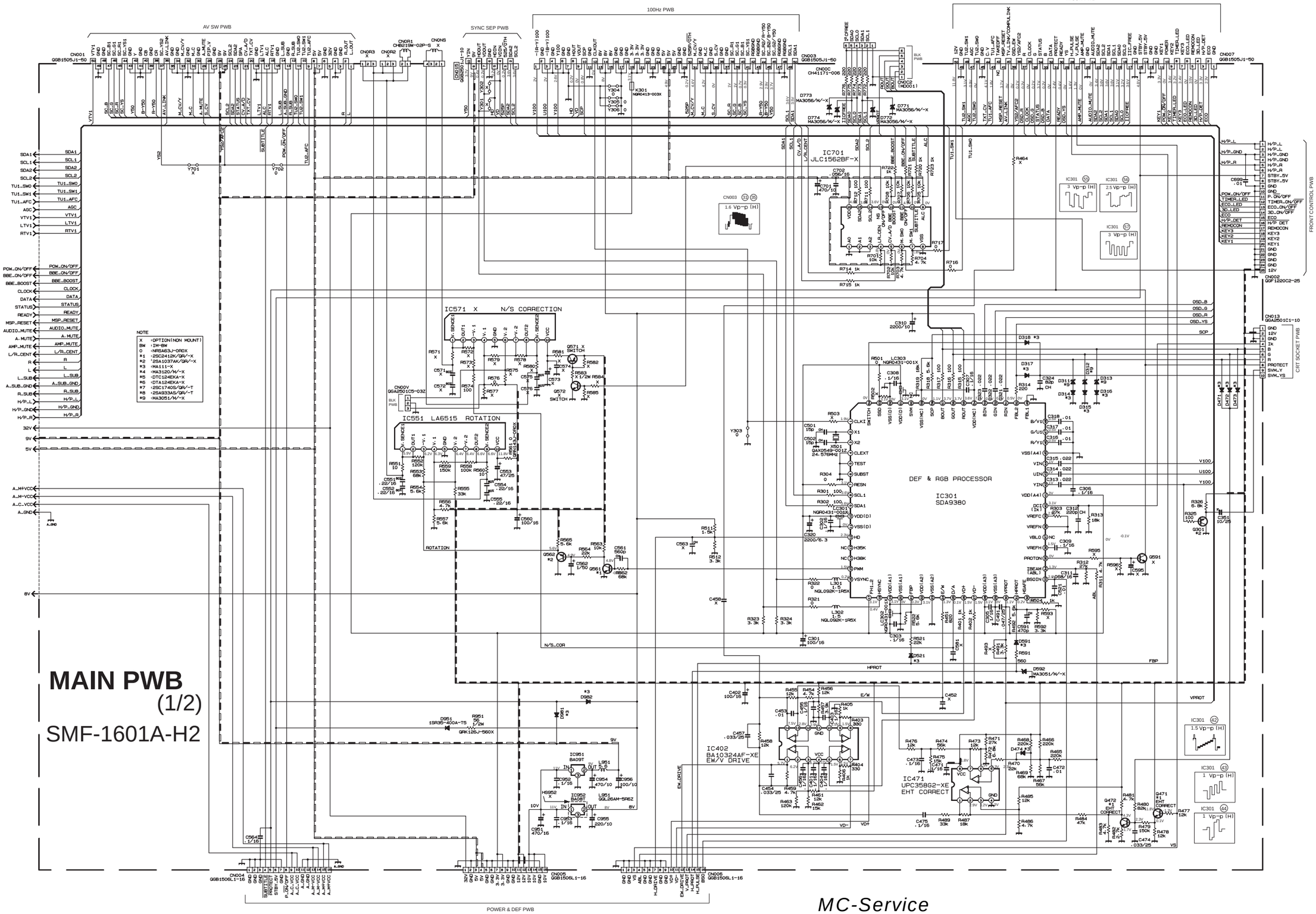
◇**NOTE**

Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.
When ordering parts, please use the numbers that appear in the Parts List.

BLOCK DIAGRAM



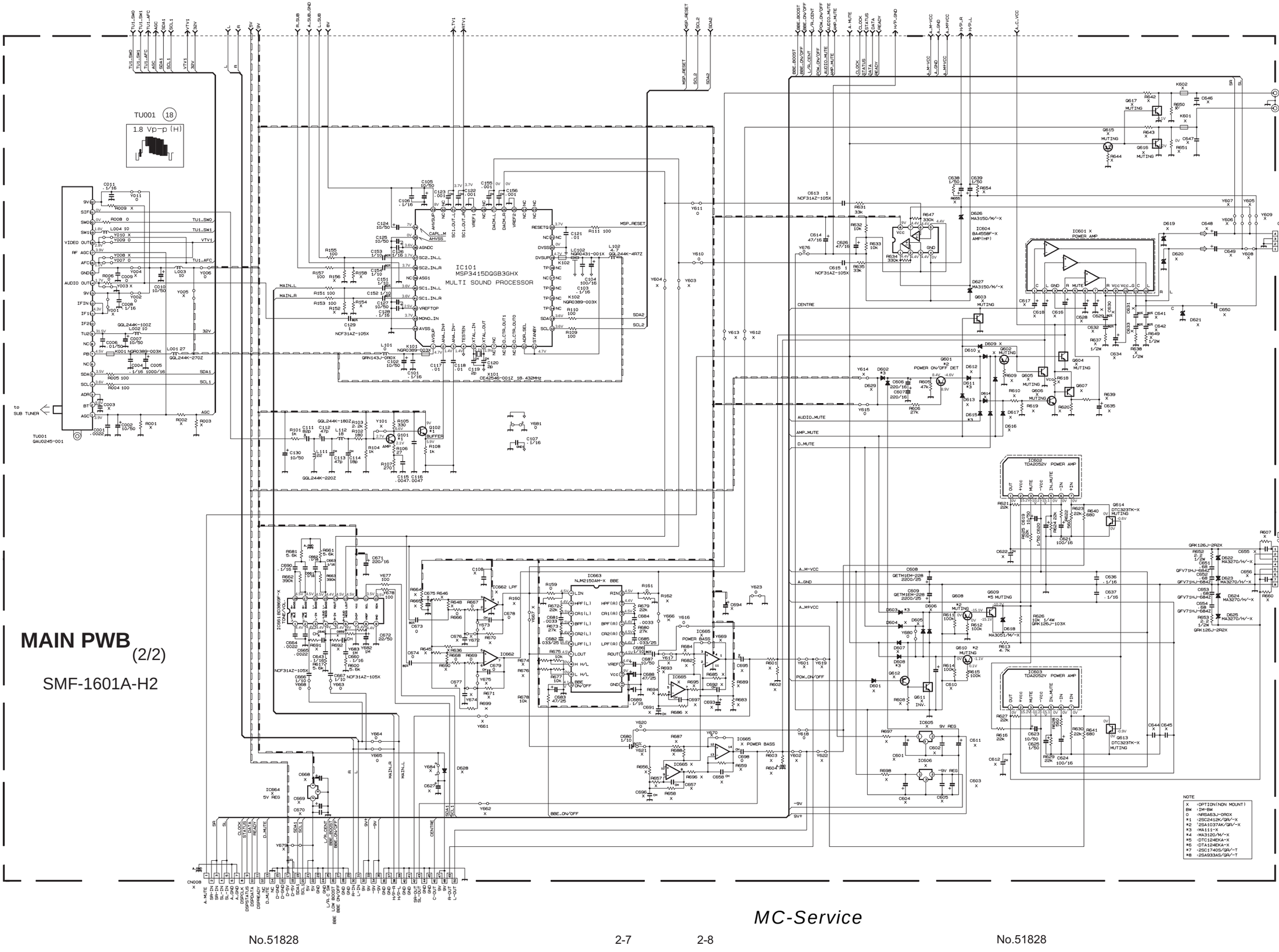
CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAM*



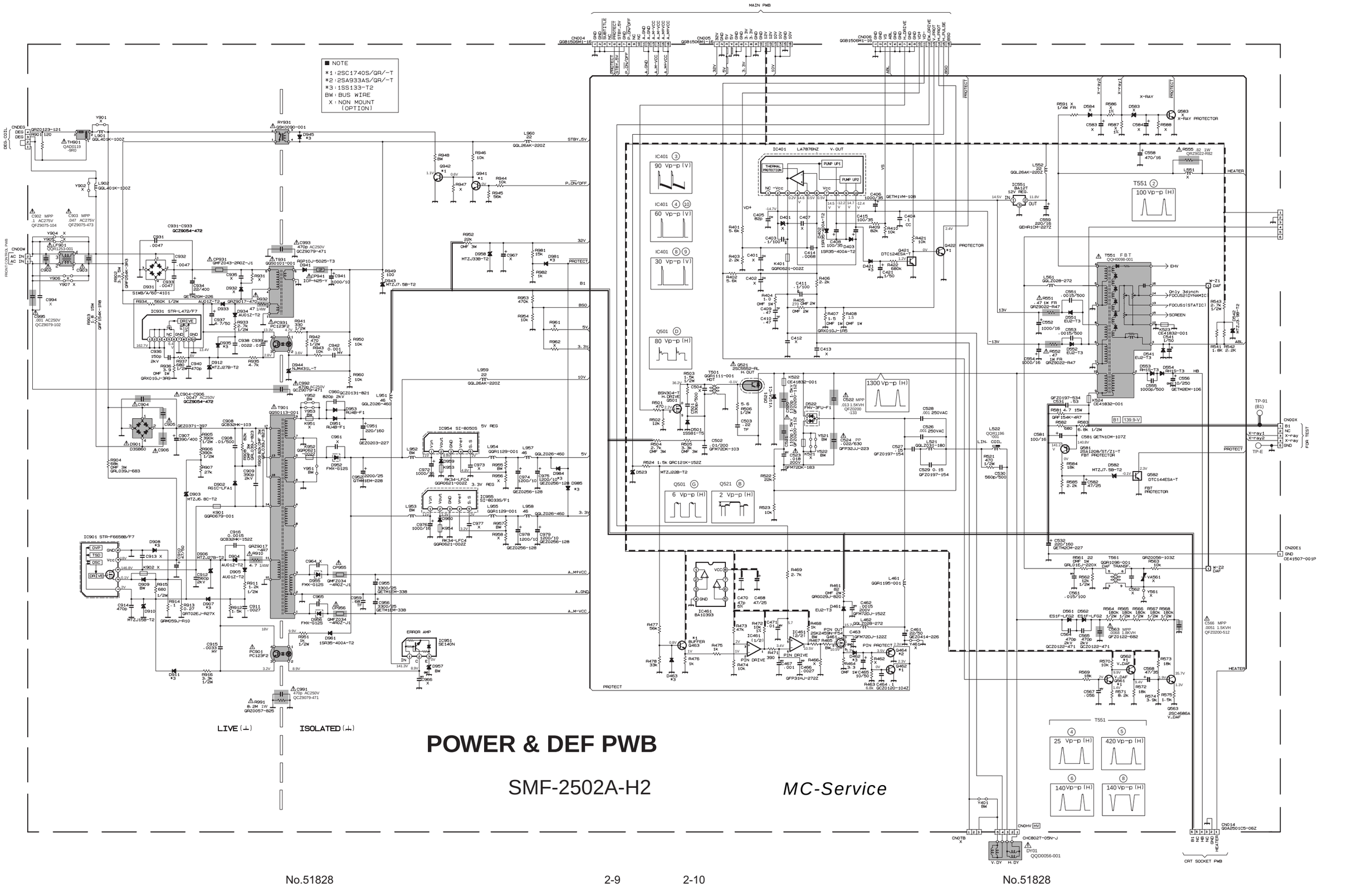
MC-Service

MAIN PWB (2/2)

SMF-1601A-H2



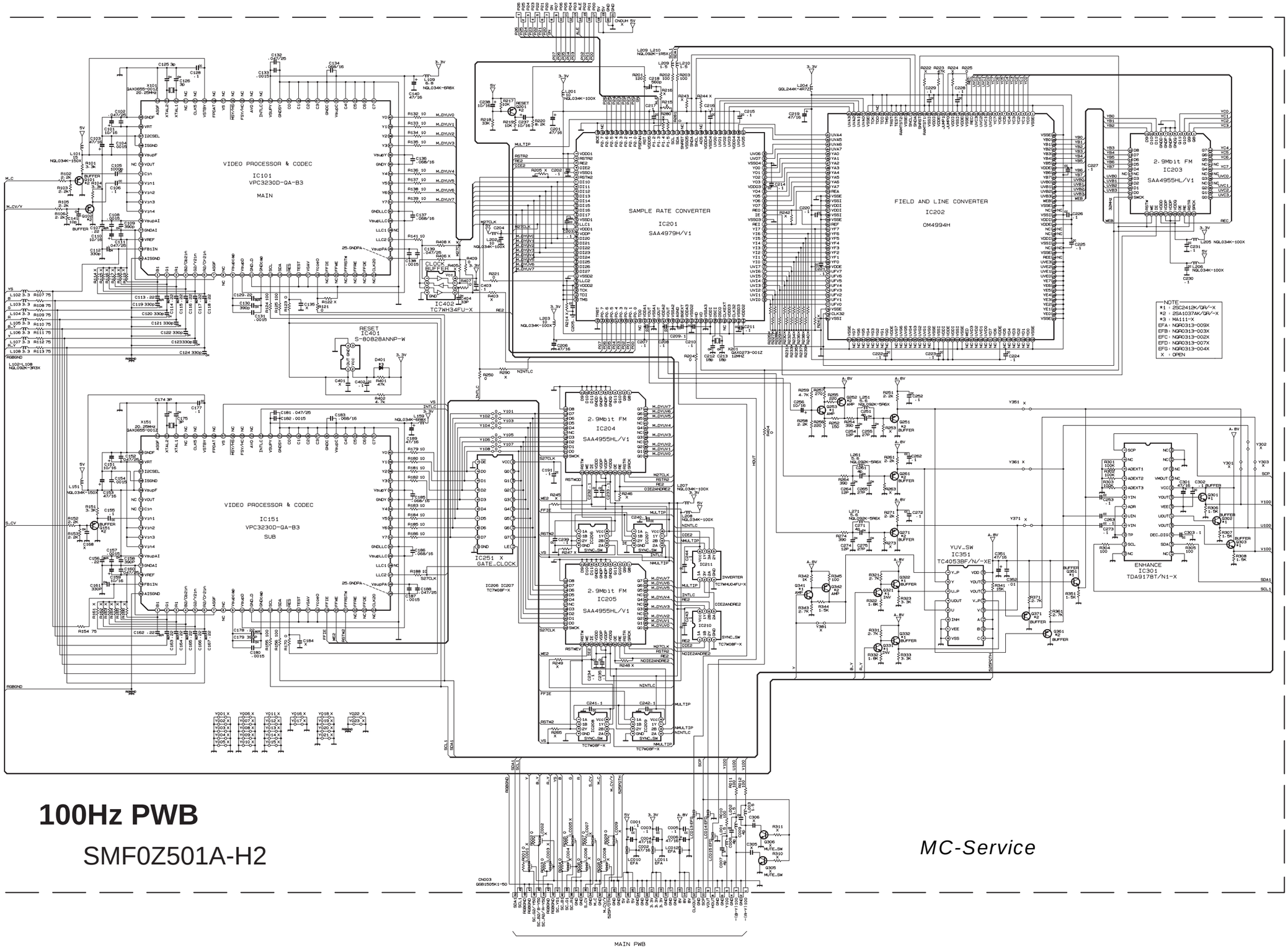
POWER & DEF PWB CIRCUIT DIAGRAM



POWER & DEF PWB

SMF-2502A-H2 *MC-Service*

100Hz PWB CIRCUIT DIAGRAM

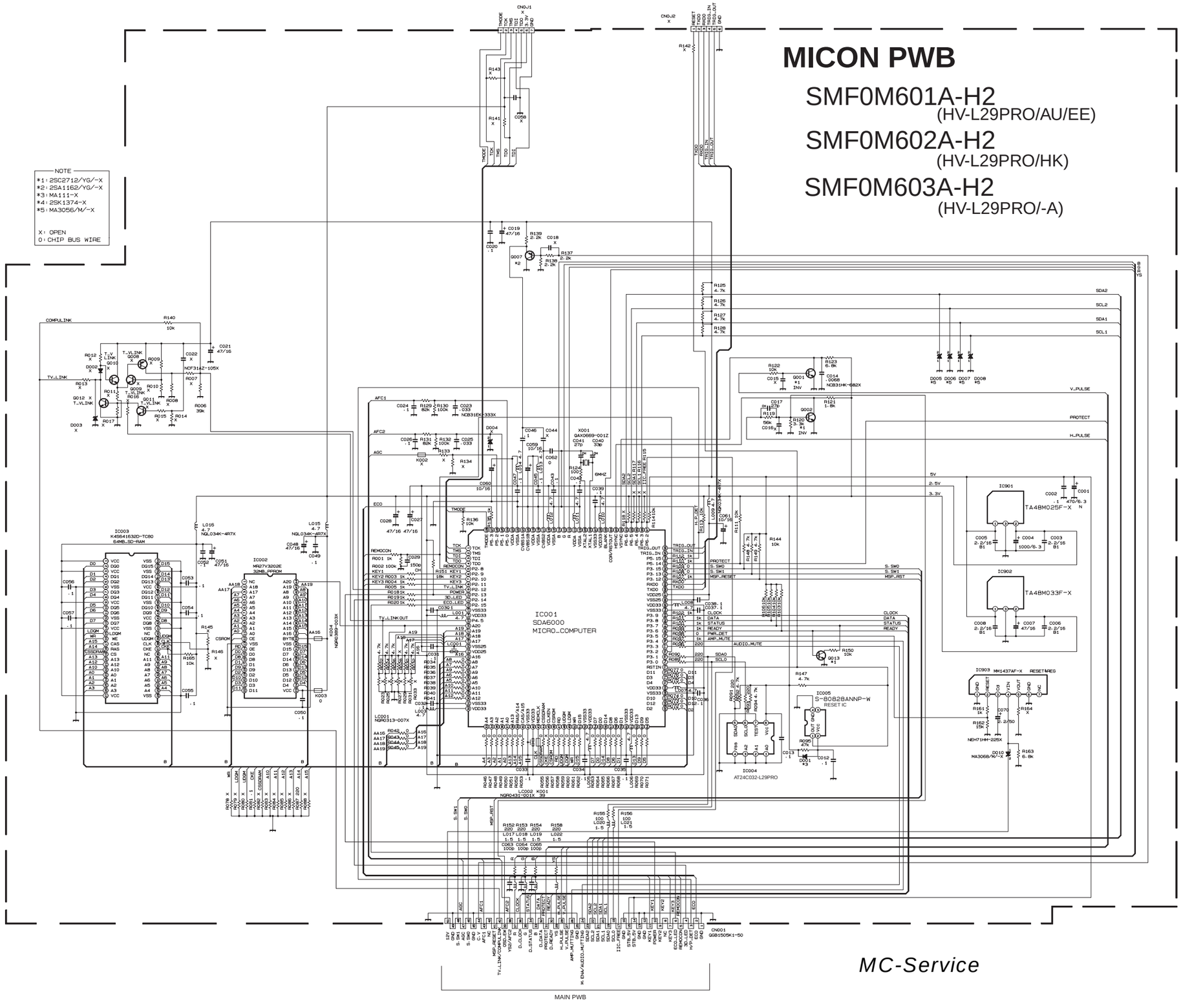


100Hz PWB

SMF0Z501A-H2

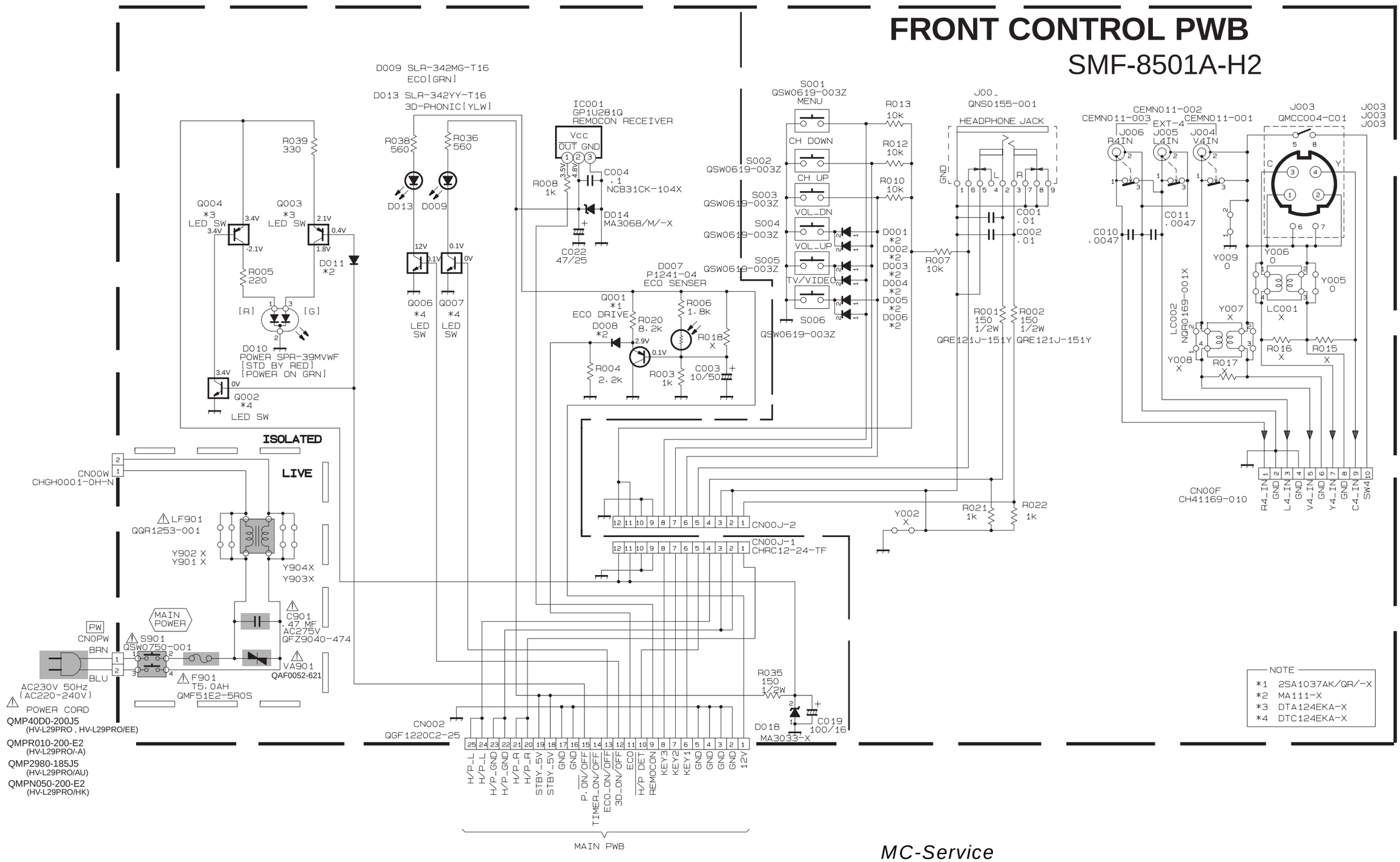
MC-Service

MICON PWB CIRCUIT DIAGRAM



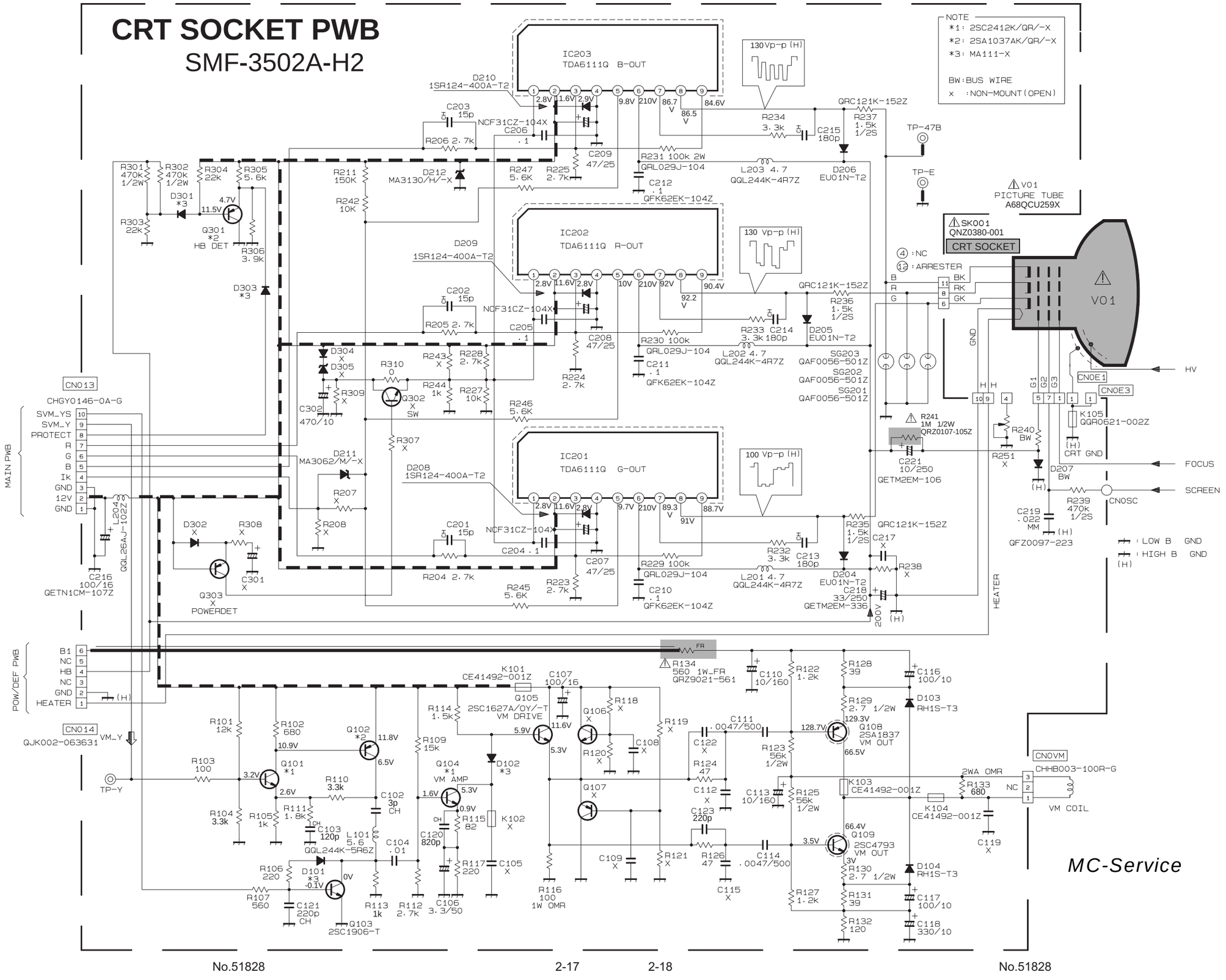
MC-Service

FRONT CONTROL PWB CIRCUIT DIAGRAM

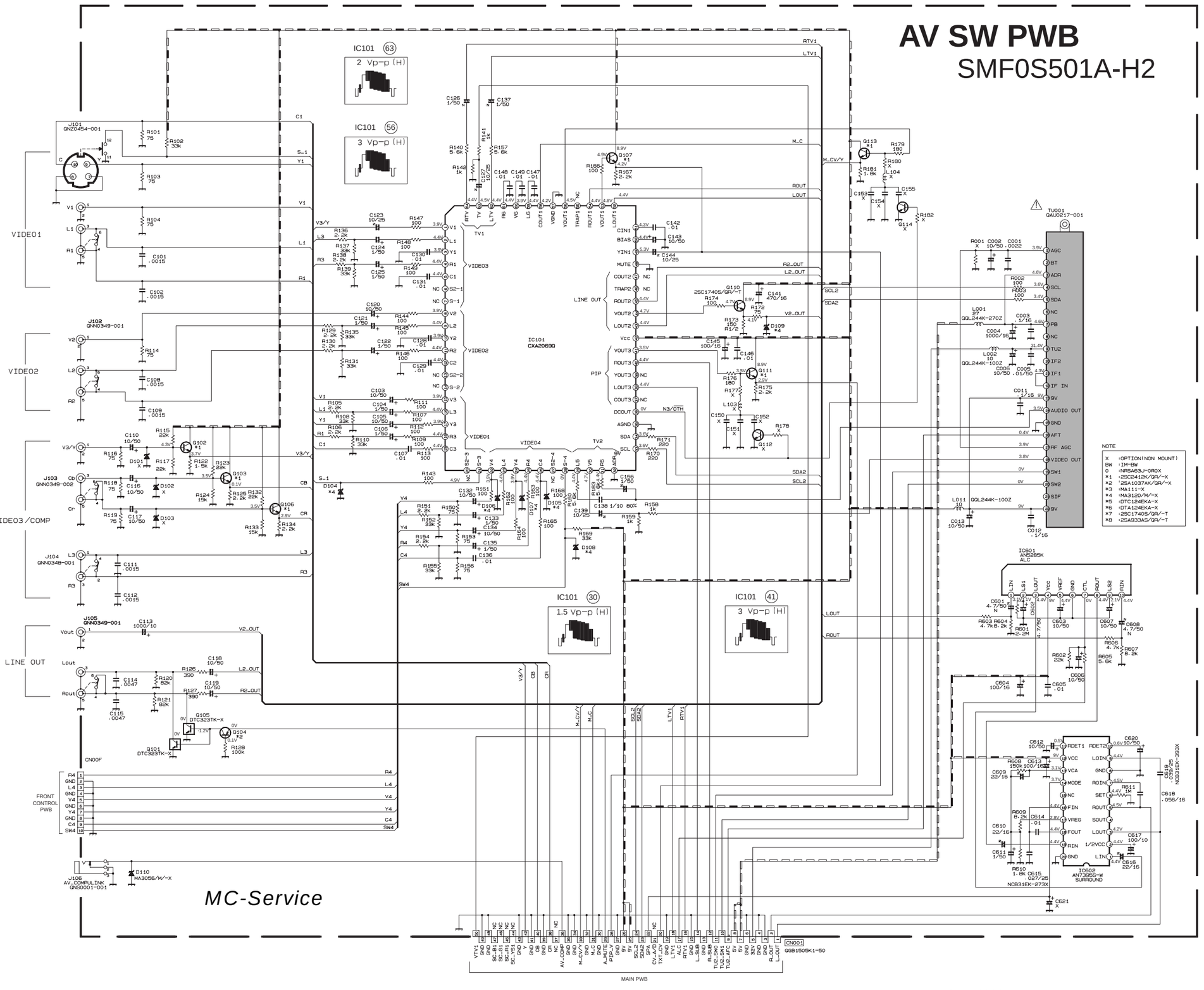


MC-Service

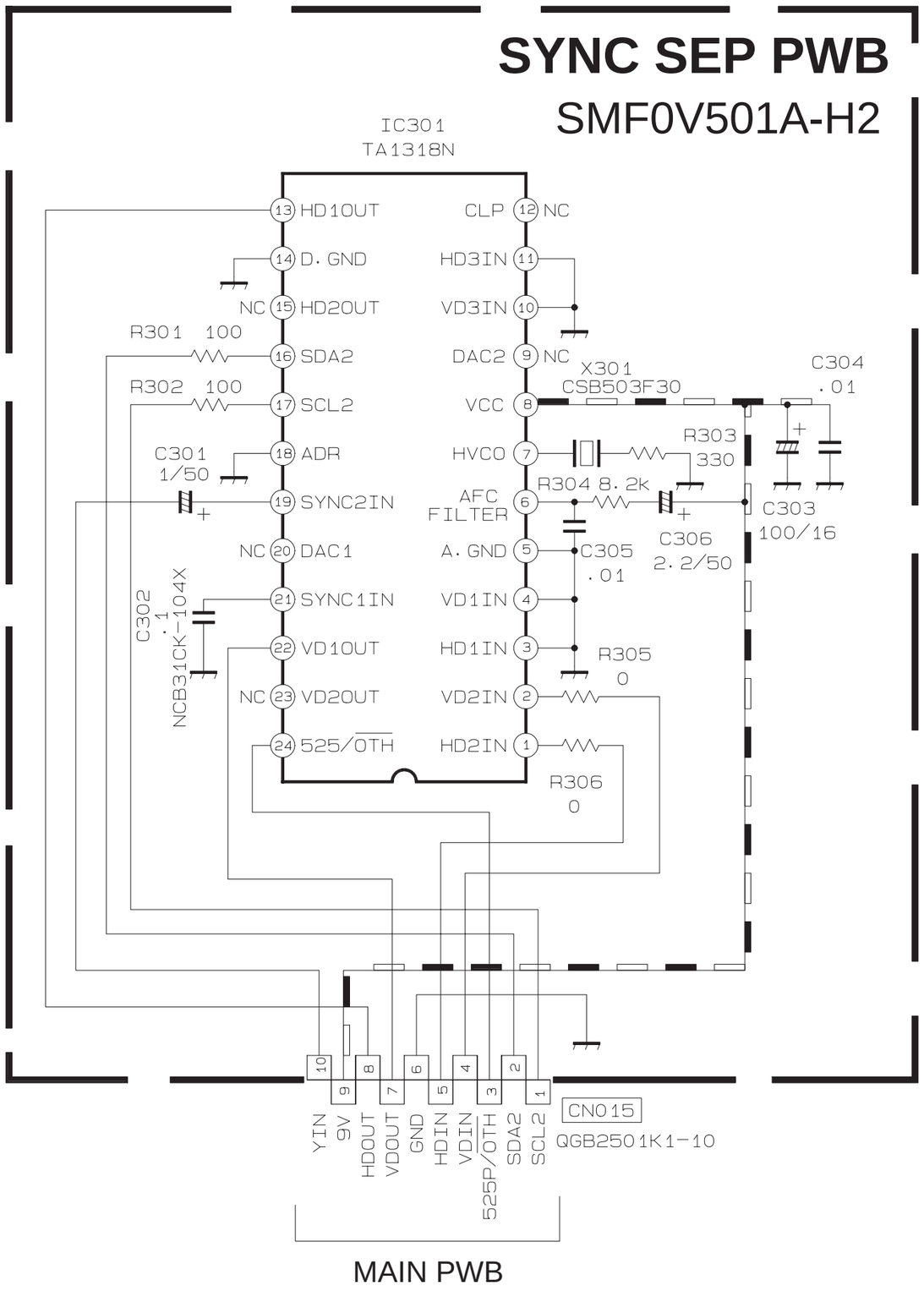
CRT SOCKET PWB CIRCUIT DIAGRAM



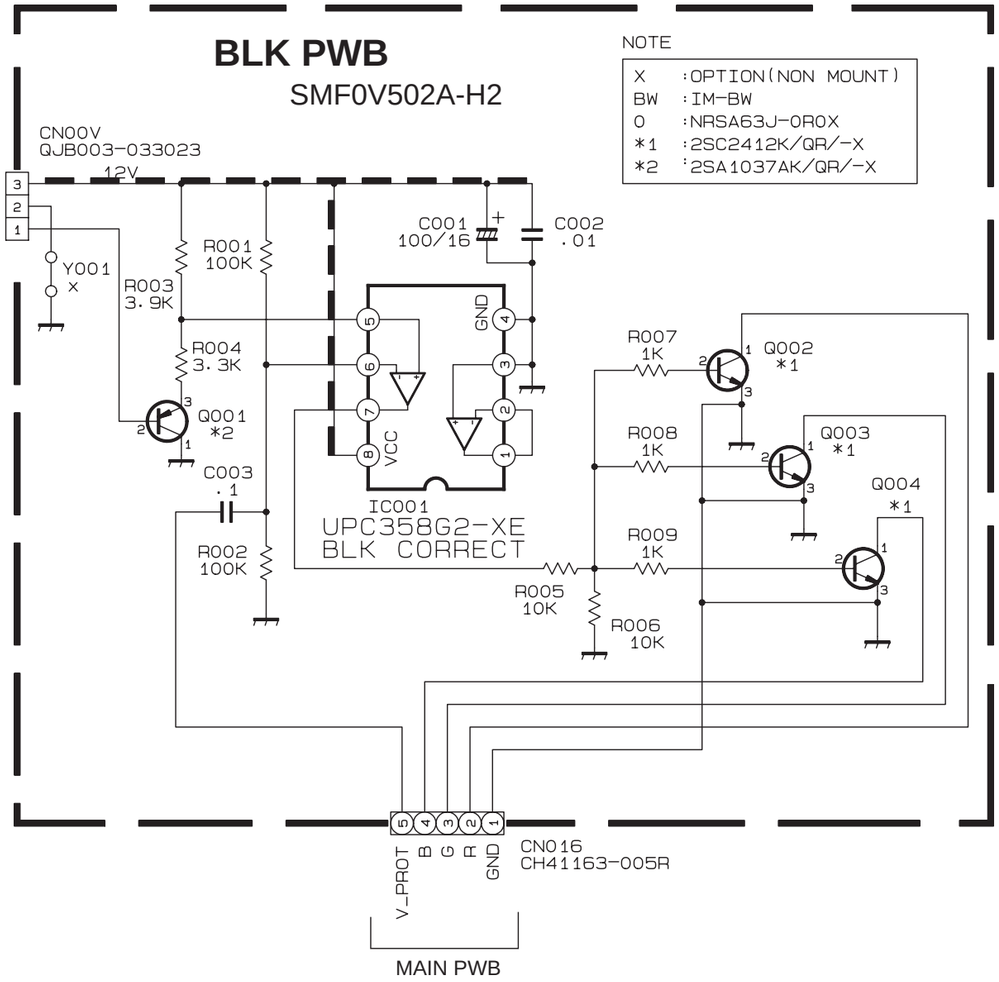
AV SW PWB CIRCUIT DIAGRAM



SYNC SEP PWB CIRCUIT DIAGRAM



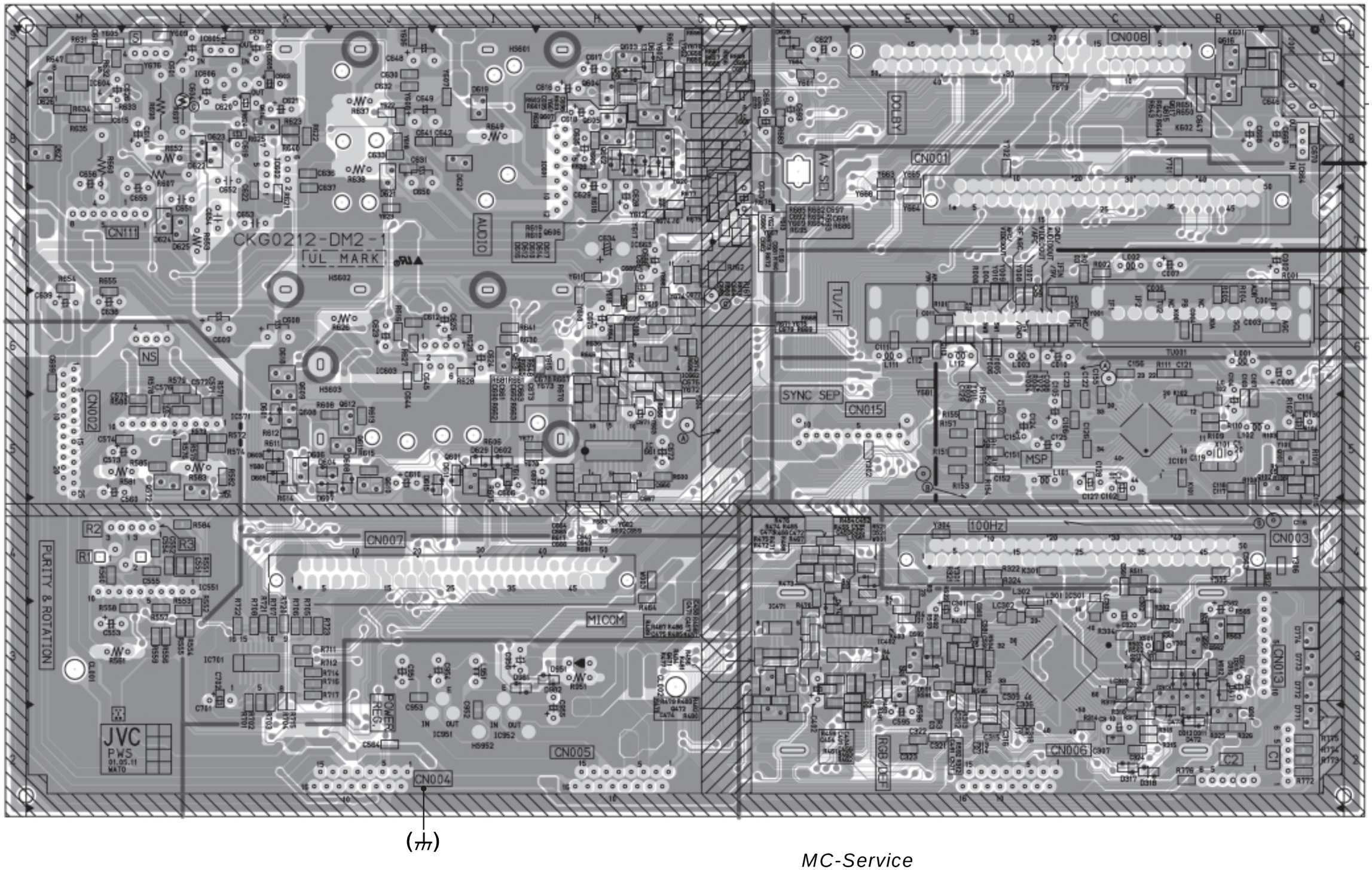
BLK PWB CIRCUIT DIAGRAM



MC-Service

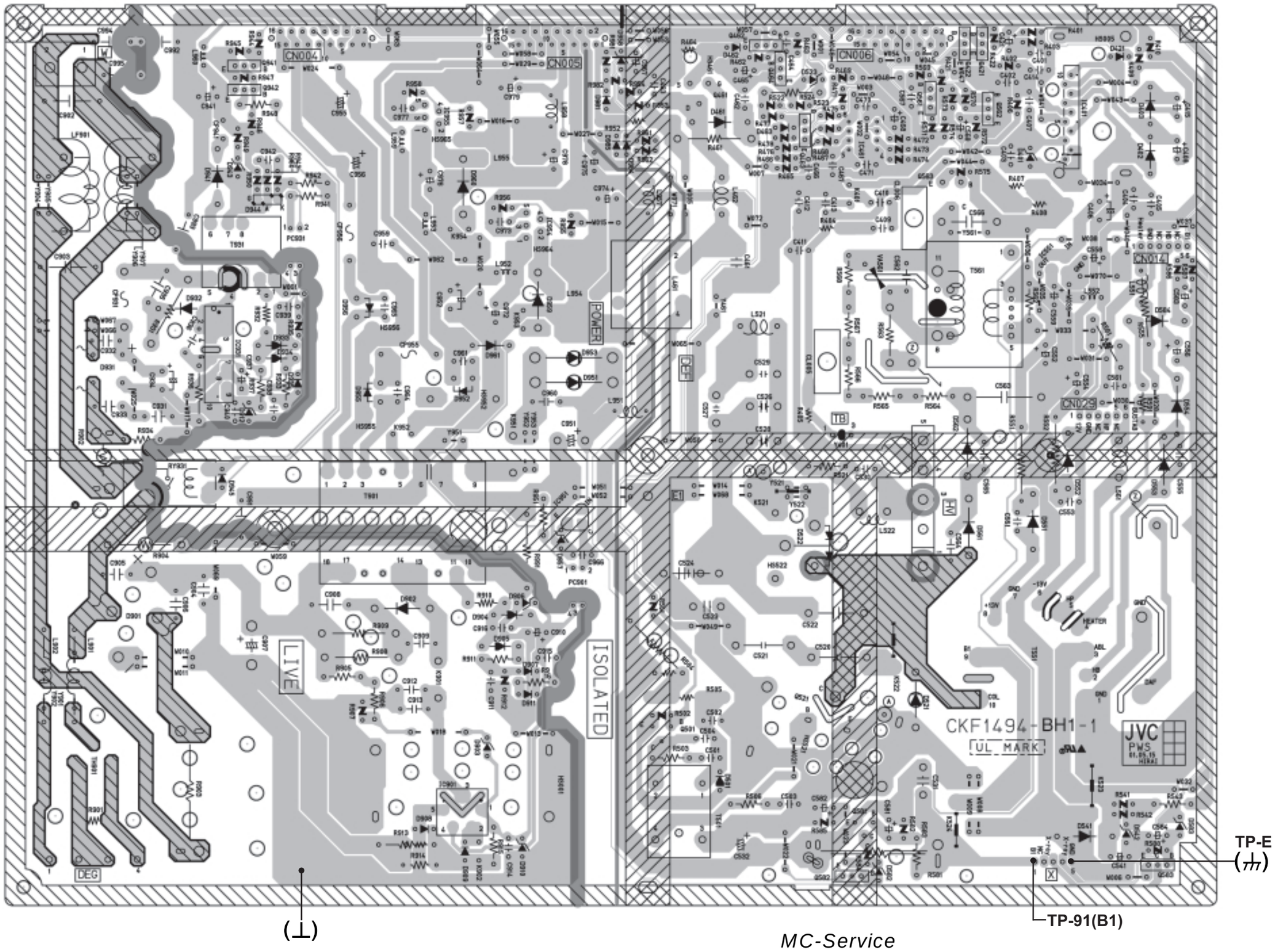
PATTERN DIAGRAMS *MAIN PWB PATTERN*

FRONT



MC-Service

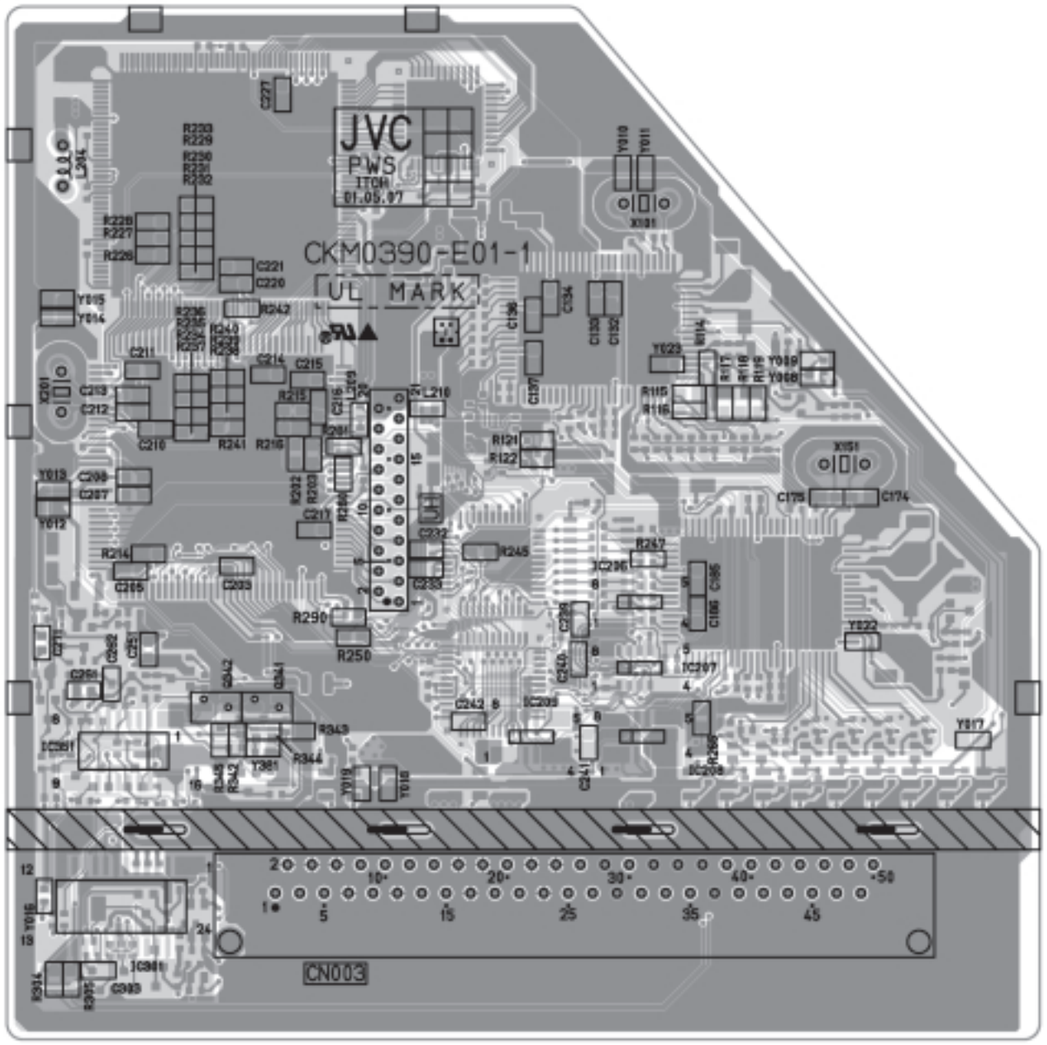
POWER & DEF PWB PATTERN



MC-Service

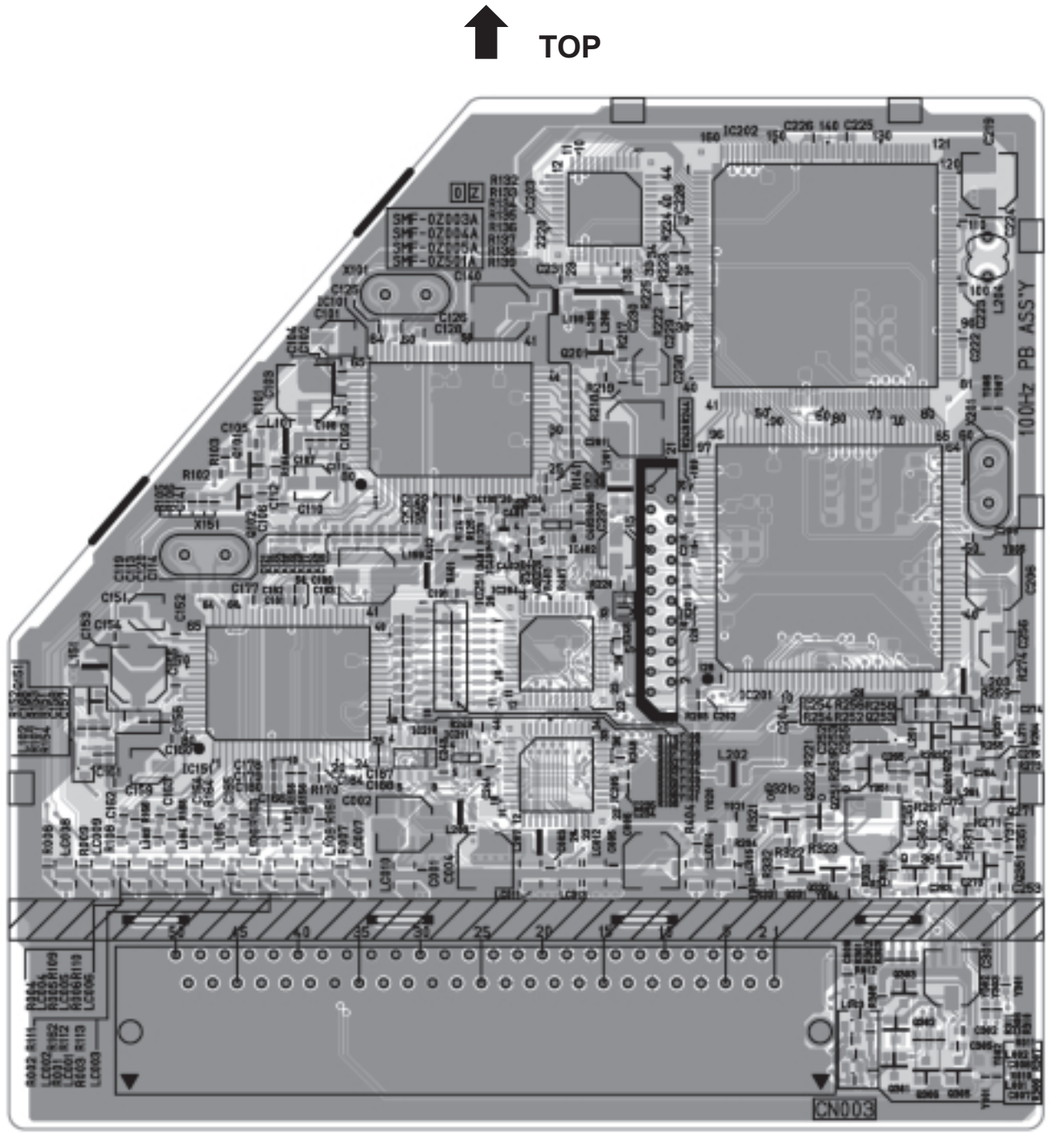
100Hz PWB PATTERN (SOLDER SIDE)

TOP



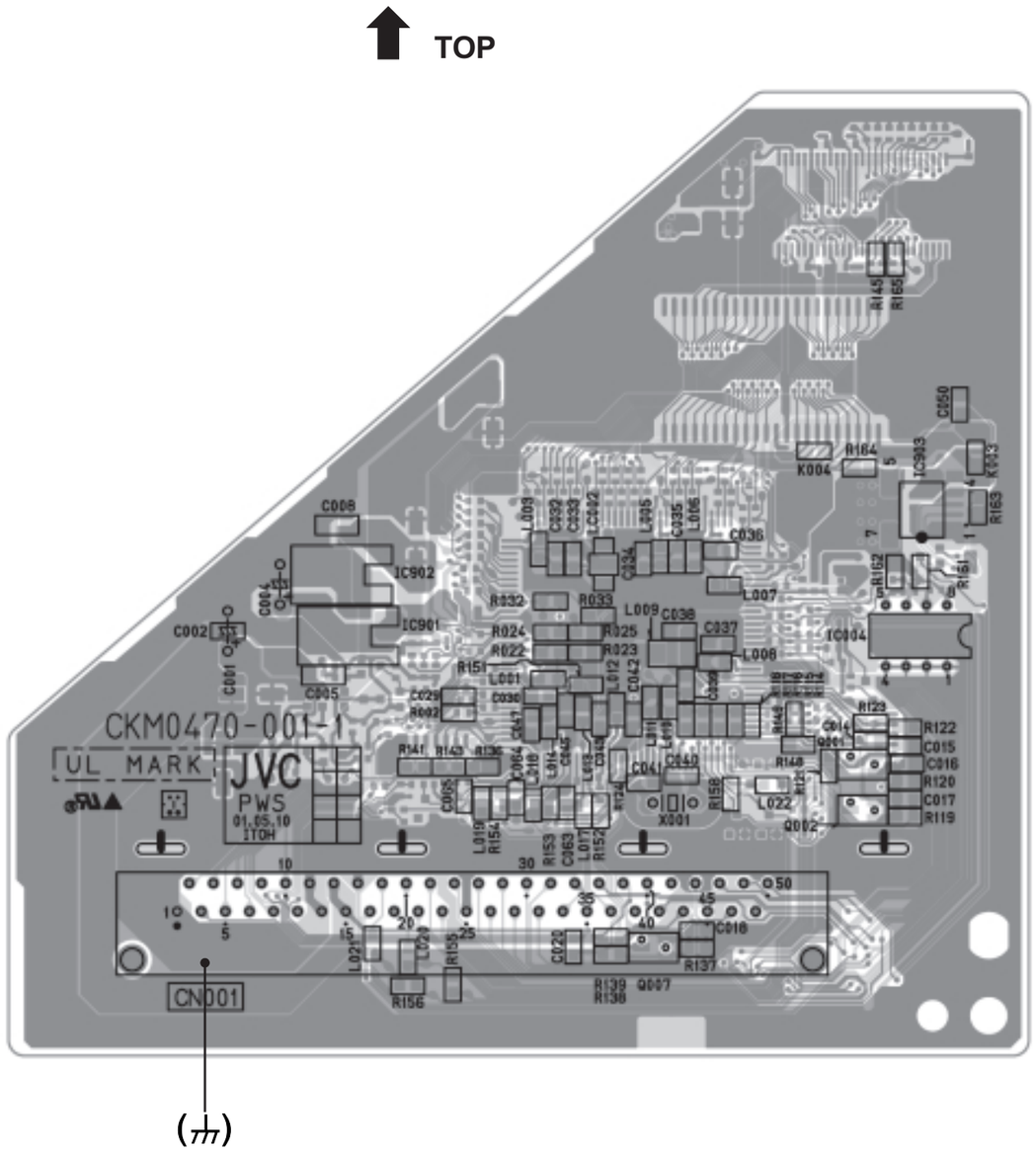
100Hz PWB PATTERN (PARTS SIDE)

TOP

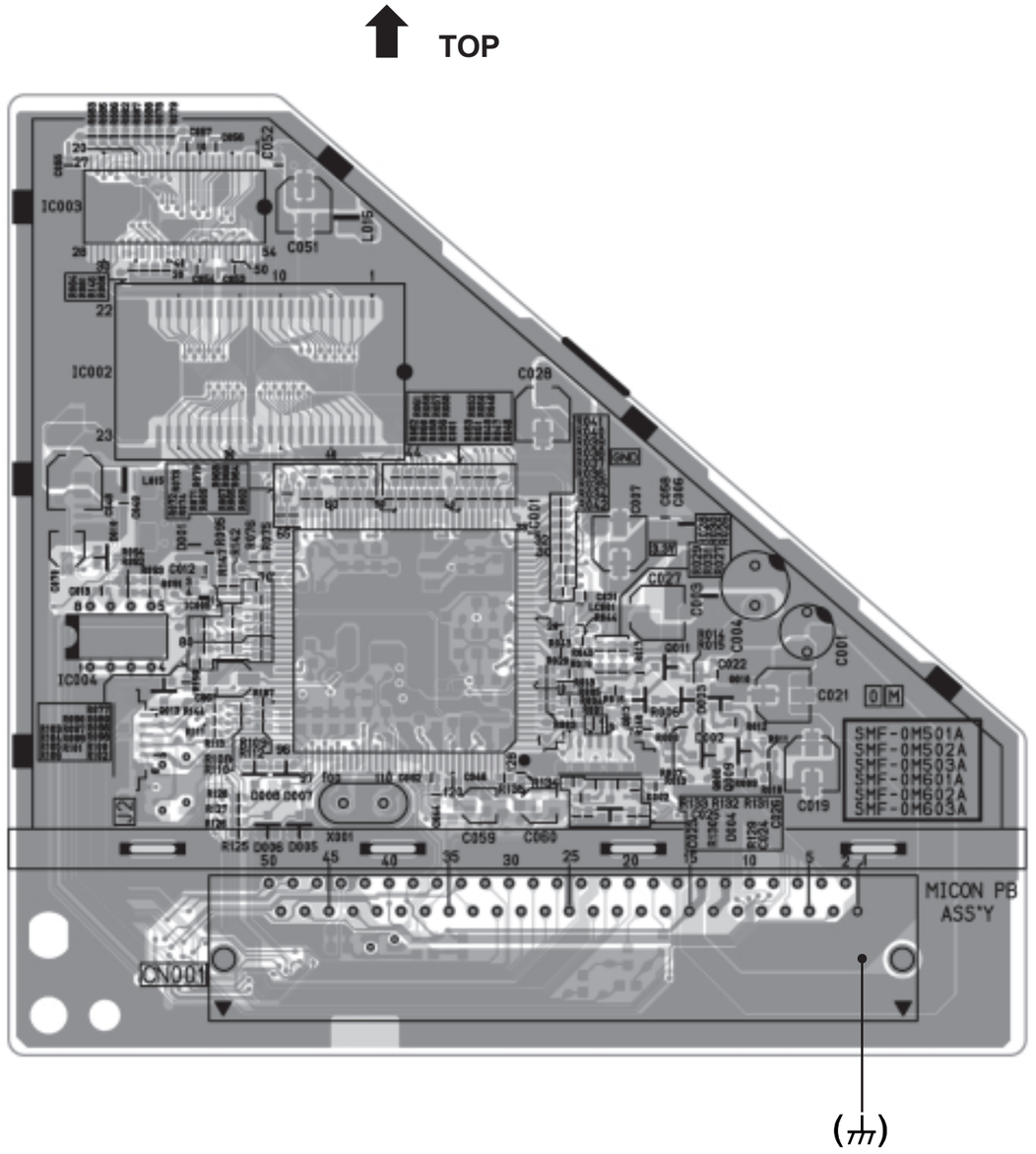


MC-Service

MICON PWB PATTERN (SOLDER SIDE)



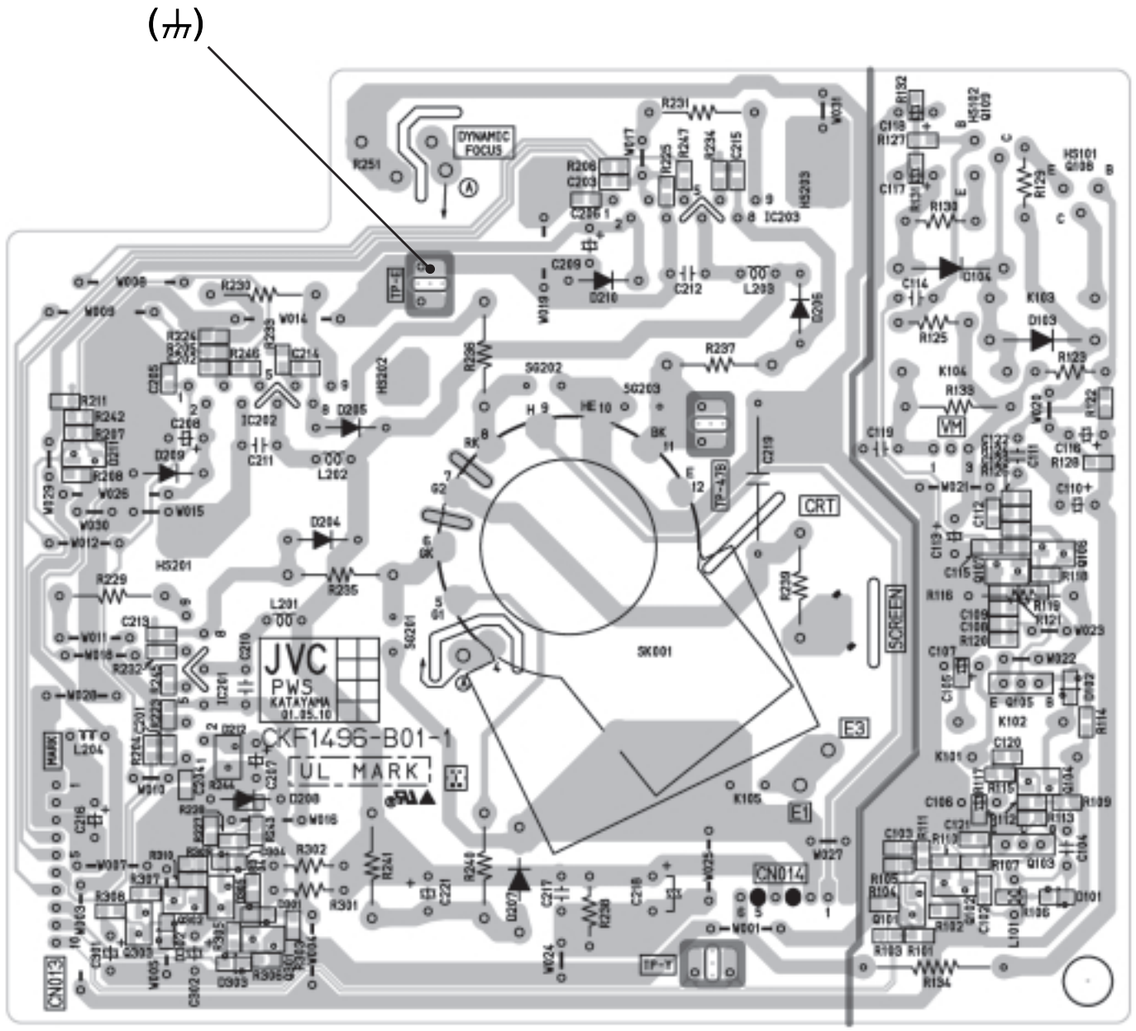
MICON PWB PATTERN (PARTS SIDE)



MC-Service

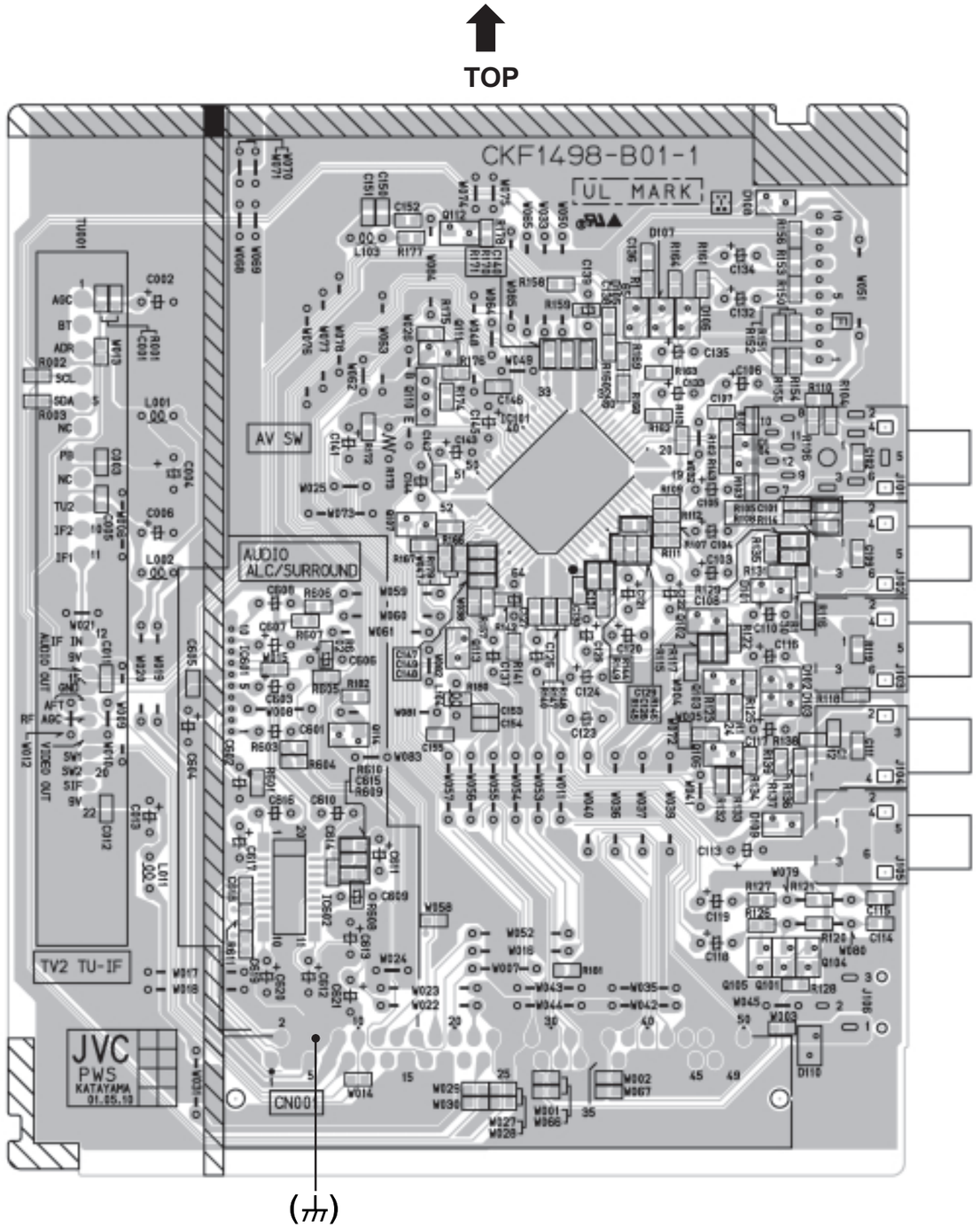
CRT SOCKET PWB PATTERN

TOP



AV SW PWB PATTERN

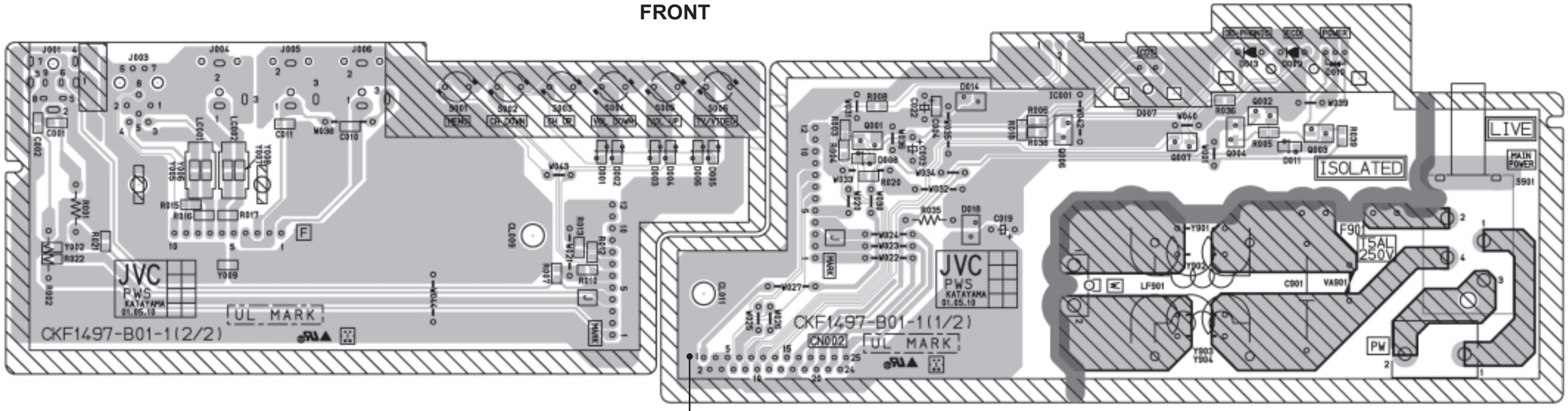
TOP



MC-Service

FRONT CONTROL PWB PATTERN

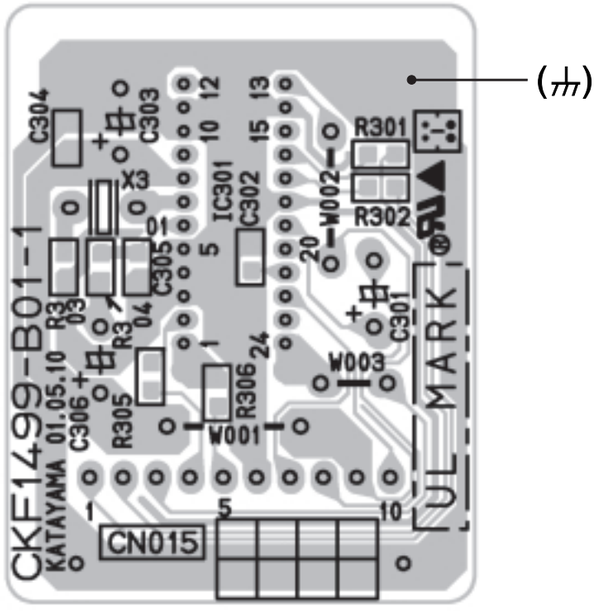
FRONT



(⏚)

SYNC SEP PWB PATTERN

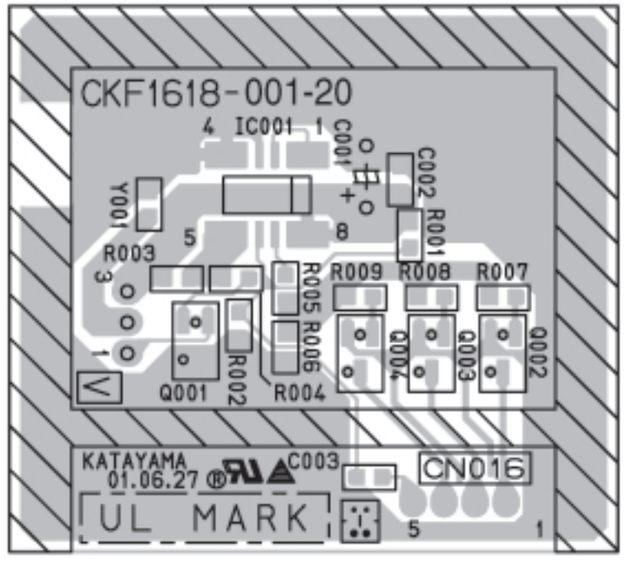
TOP



(⏚)

BLK PWB PATTERN

TOP



MC-Service

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